

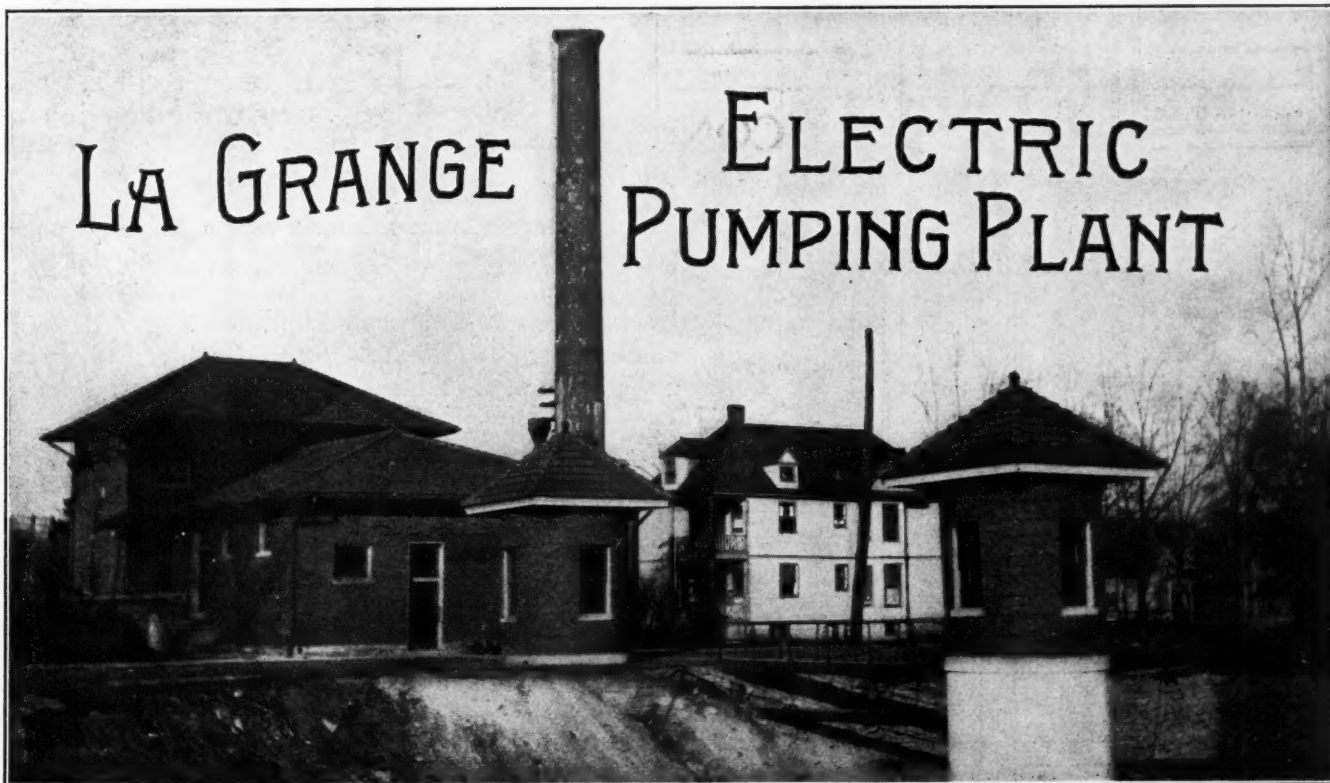
# Municipal Journal

## And Engineer

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NEW YORK, DECEMBER 16, 1908.

No. 25



MAIN PUMPING STATION AND DEEP WELL STATIONS OVER WELLS

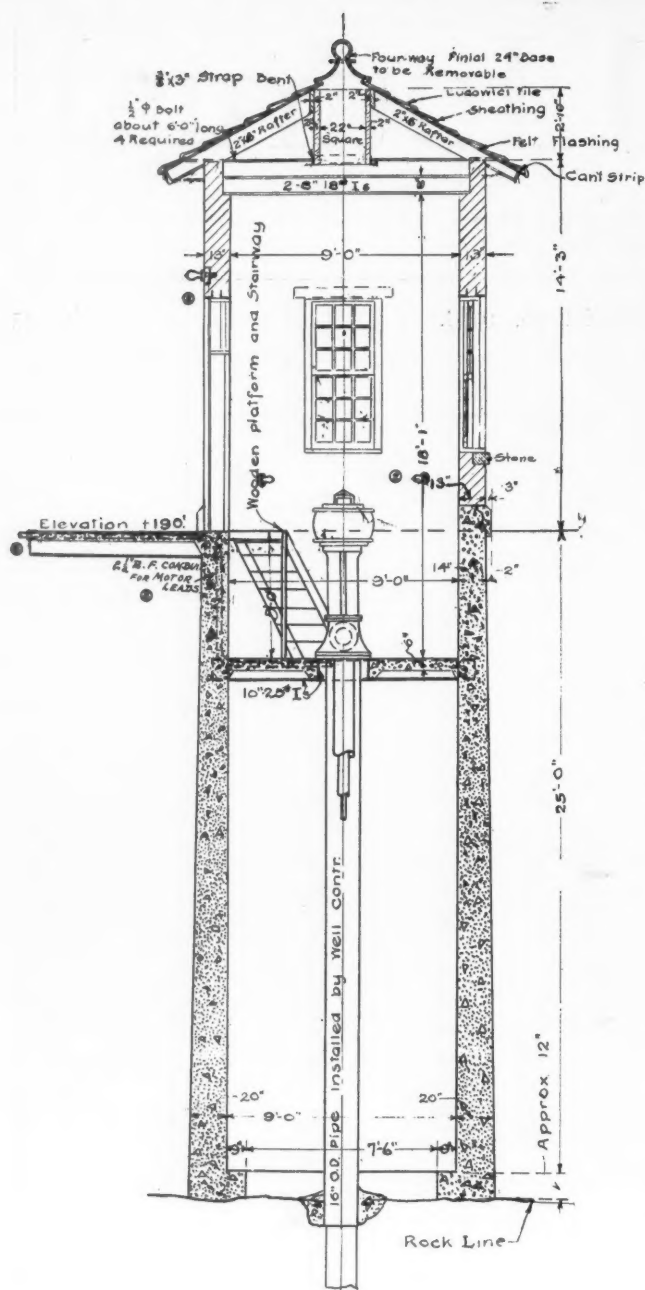
**L**A GRANGE, ILL., obtains its water supply from two wells, one 1,600 feet deep, the other 2,000 feet. A third well to take care of increased consumption is now being drilled. The water in these wells rises to within about 80 feet of the surface and the casing to that point is made 16 inches in diameter.

The pumping station for handling this water originally consisted of steam units housed in rather unsatisfactory buildings. The water was stored in an open reservoir near the plant. In 1906 the North Shore Electric Company, which operates the works, decided to reconstruct the plant and make it modern in every way, and engaged Sargent & Lundy of Chicago to prepare the necessary plans. The work was carried forward and completed in 1907. Owing largely to the fact that the company deals primarily in electric light and power, the water works being of secondary importance, and the cost to them of electric power being therefore low, it was decided to change from steam to electrically-driven pumps in the new installation. This is the first of this company's many plants to be so changed, but the remodeling of others owned by them will take place in the course of time.

In the two existing wells Byron Jackson deep well centrifugal pumps are used. While these pumps have given entire satisfaction, it is probable that in the future some pump made nearer home will be adopted, as the delay in obtaining repair parts from the manufacturer of this pump in California is an objectionable feature.

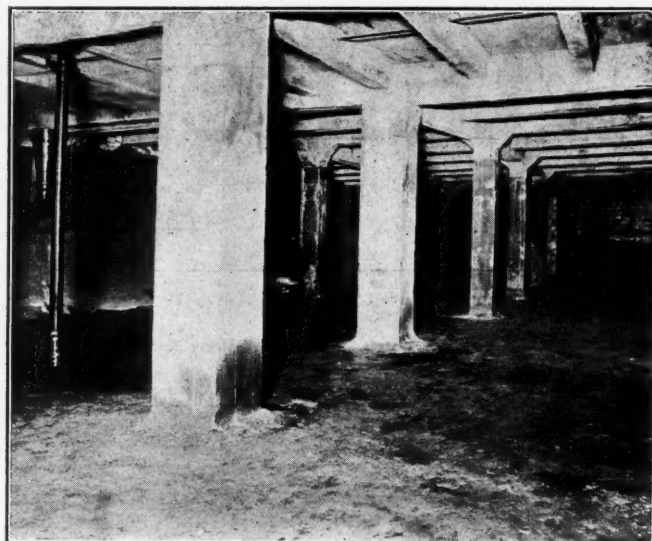
These pumps are direct connected by means of a flexible shaft to a three-phase 25 horsepower Westinghouse motor. In starting the pumps 220 volts are used, but 440 volts are regularly employed in operation. When the pumps are not in motion and when starting, the rotor rests on balls, but after they are started it is supported on a hydraulic bearing, thus relieving the shaft entirely of weight. The shaft itself is supported on hydraulic bearings when in motion. The pumps and motors are enclosed in small concrete pump houses with tile roofs, as shown in the drawing.

The water from these pumps is delivered to a covered reservoir of 500,000 gallons capacity. This is 50 feet by 125 feet 10 inches outside dimensions. The thickness of the walls is 18 inches, considerably increased at the inside toe. The roof of the reservoir, except under the pumping house, is supported on 20 x 24-inch concrete



SECTION OF DEEP WELL PUMP HOUSE NO. 1

columns spaced 12 feet one way and 12 feet 2 inches the other and reinforced by five  $\frac{3}{4}$ -inch rods, four of which are bent at the top and enter the reinforced concrete beams. The nine columns under the pumping house are 36 x 36 inches and are reinforced in the same way, their relative positions being changed a little to better support the machinery above. The roof, which is supported on 12 x 13-inch concrete girders reinforced by two  $\frac{5}{8}$ -inch bars, is made up of reinforced concrete slabs four inches thick, which are reinforced by crossed  $\frac{1}{4}$ -inch rods spaced three inches on centers in one direction and five inches in the other. Except under the pump house, the roof of the reservoir slopes the short way. The roof slabs are covered with six inches of gravel over which is spread a layer of earth twelve inches deep. Those parts of the reservoir walls which are above ground are protected and supported by banked earth. The floor of the reservoir is made of 6 inches of concrete. When full the depth of water is 10 feet 2



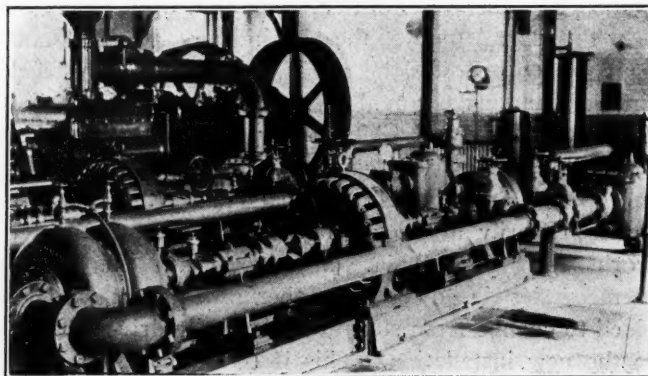
INTERIOR OF COVERED RESERVOIR

inches, which gives a minimum suction on the pumps of about three feet.

The main service pumping station rests partially on one end of this covered reservoir, and is 40 x 82 feet outside dimensions. It is built of brick with stone trimming and has a tile roof supported on steel trusses, thus being fire-proof throughout. Besides containing the pumping machinery described later, this building serves as a substation for the electrical service furnished La Grange, and houses the necessary switch boards, transformers, regulating devices, etc.

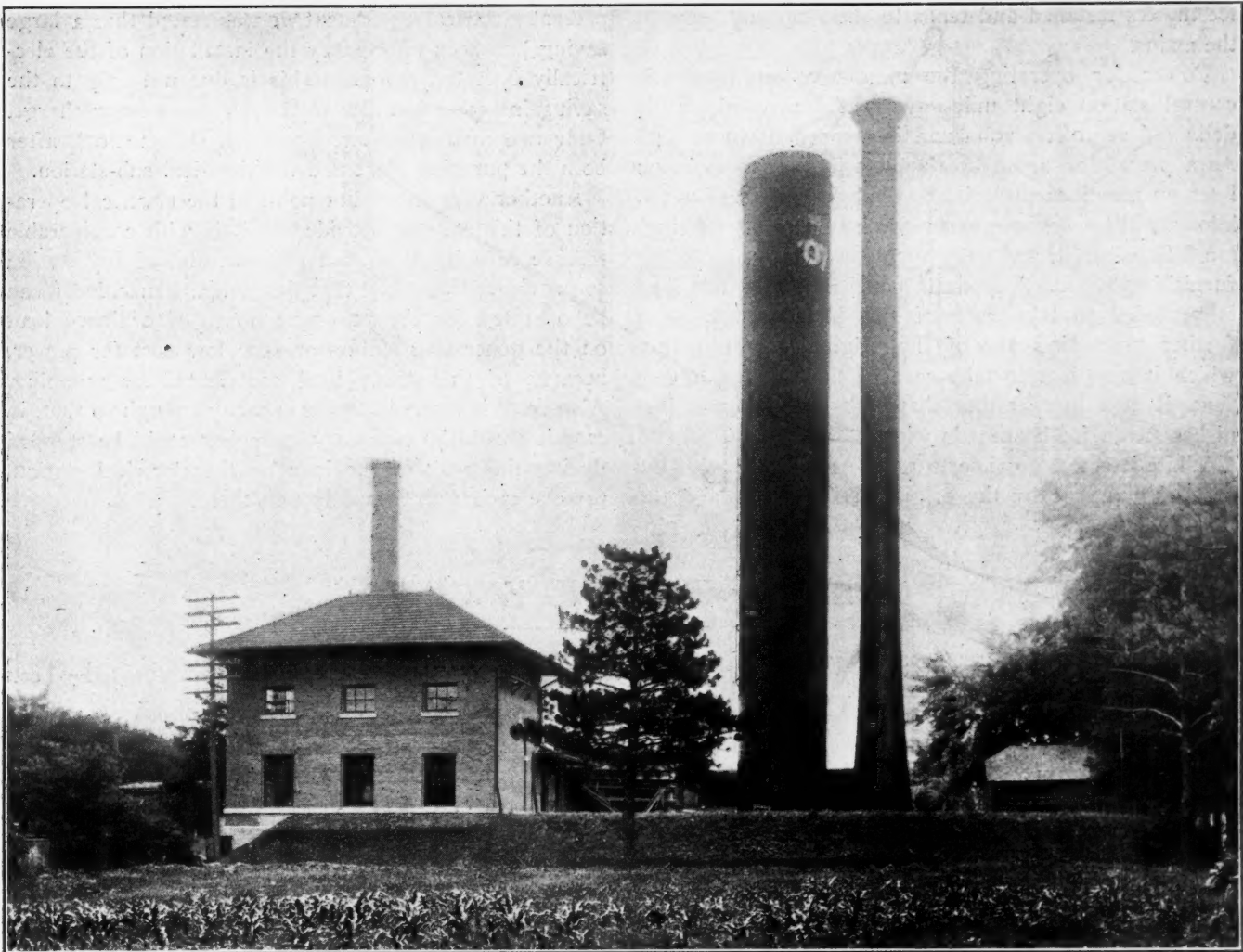
The pumping units in use are two motor-driven 700-gallon-per-min. Byron Jackson centrifugal pumps, each direct connected to Westinghouse 50 horsepower three-phase 440-volt motors. These motors are located centrally on a shaft, at the extremities of which are attached 350-gallon-per-min. two-stage centrifugal pumps, which when operated in parallel deliver 700 gallons per minute under 50 pounds pressure. These pumps discharge to a standpipe or equalizing tower just outside the pumping station. In case of increased pressure being demanded by fire, by closing one valve and opening another it is possible to run the two ends of the pump in series, or as a single four-stage pump, thereby raising the pressure to 100 pounds but reducing the delivery to 350 gallons per minute.

All water leaving the pumps is metered by a six-inch National Gem Meter. This acts as a check on the serv-

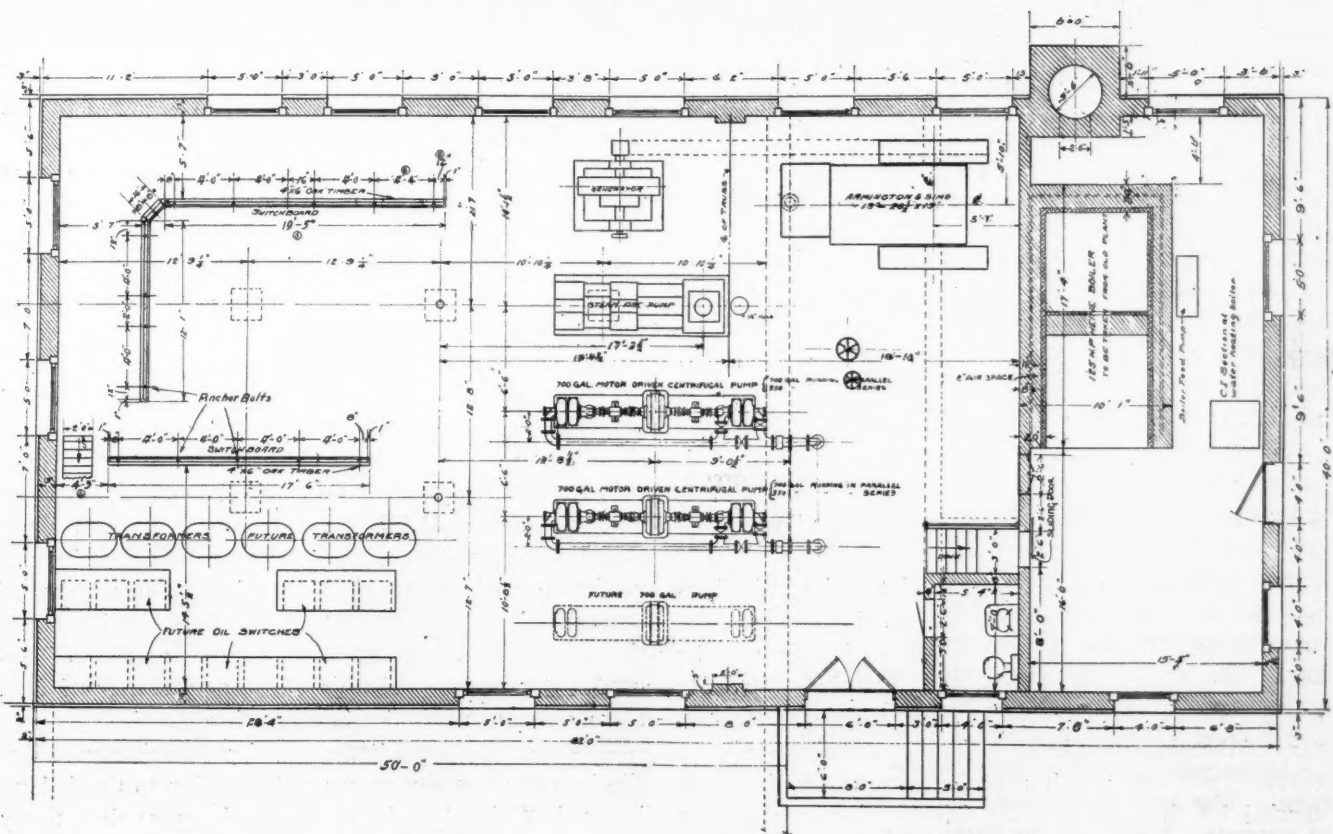


INTERIOR OF MAIN PUMPING STATION





MAIN PUMPING STATION, STAND PIPE AND STACK OF OLD STEAM PLANT



### GROUND PLAN OF MAIN PUMPING STATION

ice meters installed and tends to show up any leaks in the mains.

Power for operating the motors comes from the central station eight miles away at Maywood. It is delivered at 10,000 volts and is stepped down to 440. As a precaution against breakdowns in the transmission lines an auxiliary plant is installed consisting of a 100 kilowatt Westinghouse generator belted to an Armington & Sims engine and a 125 horsepower Heine boiler for furnishing steam. A separate panel of the switchboard is provided to take care of this installation. As a further precaution one of the original steam pumps, which is sufficient to take care of the demand at any time, is kept in operating shape. A small heater furnishes steam for heating in winter.

While it is not possible to get detailed figures of the cost of pumpage by the original steam plant and the

present electrical equipment, it was stated that a large saving had been effected by the installation of the electrically operated pumps. This is due not only to the saving in power but also to the decreased labor charge. Only one man is required on each shift to look after both the pumping plant and the electrical sub-station.

Another very important point in the electrical operation of this station, provided as it is with considerable reserve capacity in its water tower, and of any station so provided, is the fact that the pumping machinery can be operated for the 21 or 22 hours of ordinary load on the generating station at very low cost for power, because of the steady load contributed by pumping. Also there is reserve storage capacity enough so that, in case it should be necessary, pumping could be stopped during the peak of the load on the electrical station, thereby easing up the equipment there.

## SLIP OF PUMPING ENGINES

### Importance of Considering It in Water Works Calculations—Its Amount Generally Underestimated—Tests in More than Thirty Cities—Use of Pitometer for Measuring Slip—Other Methods

A CONSIDERABLE percentage of the data published in reports and otherwise concerning the operation of water works plants and water works consumption in cities is based upon the quantity of water which is pumped into the mains. A few of the items into the calculation of which this quantity enters are the consumption per capita, the percentage of water unaccounted for even when all services are metered, the amount of water filtered per day, etc. If the quantity of water actually entering the mains is not correctly estimated, then all such figures as those just indicated must be incorrect. Where the water supply is pumped, a convenient method of measuring the quantity is to calculate the amount displaced at each stroke of the piston or plunger and then, by means of the engine counter, calculate the amount thus assumed to pass through the pumps. Probably in the majority of cases where data are presented concerning a pumped supply, the quantity stated to be supplied is calculated in this way. In some cases an allowance is made for what is called the slip of the pump—the amount by which the quantity actually leaving the pump is less than that which theoretically should do so. In some cases a more or less close estimate of the amount of slip is allowed for in the data published; in probably more cases no such allowance is made.

Slip is usually caused by one of two imperfections in the pump; either there is a slight play between the piston and cylinder, or between the plunger and its rings; or the valves do not seat tightly or quickly enough and water flows back through them on the return of the piston or plunger. The first is almost always caused by wear, which may be very rapid if grit is carried by the water. The failure of valves to seat tightly is also generally due to wear but may be caused

by a small stone or other obstruction wedged in the valve. The failure of the valves to seat quickly may be due to weak springs or to a jamming of the valve due to wear or some foreign substance. There are, of course, other causes which may occasionally produce slip, but these are the ones which are almost sure to sooner or later produce their effect in every pump, unless by frequent observation they are detected in their incipency and at once remedied.

It is frequently stated and assumed that an allowance of 1 per cent. of slip for a comparatively new pump and 5 per cent. for an old one is sufficiently close for all practical purposes. In a number of instances, however, indignant denial and honest incredulity on the part of the officials in charge of pumping stations have been compelled to give place before absolute proof of slips amounting to from 25 to 75 per cent. of the theoretical discharge. Such an amount of slip or anything approaching it is a most serious matter. It not only practically vitiates all the records and calculations based upon quantity of consumption, but it causes much actual money loss. In the first place, the friction of the water churning back and forth past the plunger or through the valves absorbs considerable energy, whose counterpart appears in the coal bill. An apparently enormous per capita consumption frequently leads to expensive investigations of the supply mains for possible leaks, of consumers' premises for waste and to other investigations to determine where the enormous amount of unused water goes to; all this when, as a matter of fact, there was no excessive consumption.

As a proof of the assertion made concerning excessive slip in numerous pumps, we call attention to the following table giving the slip of pumps in more than thirty American cities:



## SLIP OF PUMPS

Results of Tests Made Upon Water Works Pumps in Regular Service in More Than Thirty American Cities

TYPE OF PUMPS	Pumping Rate, Gal. Per Day	Slip Rate, Gal. per Day	Slip in % of Pumping Rate
<i>Verticle, Triple, Crank and Fly Wheel</i>			
1 Plunger, outside packed.	15,044,000	644,000	4.2
2 " " "	12,775,000	306,000	2.4
3 " " "	21,956,000	1,585,000	7.2
4 " " "	10,000,000	100,000	1.
5 " " "	6,502,000	604,000	9.3
6 " " "	4,519,000	768,000	17.
7 " " "	1,635,000	65,000	4.
8 " " "	7,390,000	340,000	4.6
9 " " "	20,400,000	878,000	4.3
10 " " "	20,600,000	454,000	2.2
11 " " "	21,700,000	434,000	2.
12 " " "	15,230,000	3,807,000	25.
13 " " "	25,963,000	16,863,000	65.
14 " " "	25,260,000	5,052,000	20.
15 " " "	9,263,000	363,000	4.
16 " " "	17,216,000	686,000	4.
17 " " "	14,024,000	764,000	4.
<i>Vertical, Compound, Crank and Fly Wheel</i>			
18 Plunger, inside packed	32,853,000	6,950,000	21.
19 " " "	35,712,000	7,929,000	28.4
20 " " "	24,847,000	10,147,000	41.
21 Plunger, outside packed	15,125,000	9,075,000	60.
22 " " "	2,314,000	1,710,000	73.8
23 No. 22 after repair. . . . .	1,260,000	314,000	24.9
<i>Horizontal, Duplex, Crank and Fly Wheel</i>			
24 Plunger, inside packed	7,361,000	3,750,000	65.
25 " " "	4,989,000	2,300,000	31.
26 " " "	12,630,000	630,000	5.
27 " " "	11,900,000	750,000	7.
28 " " "	13,150,000	660,000	5.
29 " " "	13,330,000	1,060,000	8.
30 " " "	4,042,000	1,470,000	36.4
31 " " "	23,384,000	4,160,000	17.8
32 " " "	11,573,000	1,542,000	13.3
33 Plunger, outside packed	5,860,000	527,000	9.
34 " " "	4,770,000	281,000	5.9
35 " " "	9,293,000	2,137,000	23.
36 " " "	9,320,000	2,143,000	23.
37 " " "	9,633,000	2,215,000	23.
38 " " "	14,990,000	600,000	4.0
<i>Horizontal, Duplex, Direct-Acting</i>			
39 Plunger, inside packed	10,982,000	2,416,000	22.
40 " " "	9,417,000	1,883,000	20.
41 " " "	19,250,000	1,155,000	6.
42 " " "	3,010,000	150,000	5.
43 " " "	3,120,000	343,000	11.
44 " " "	10,000,000	420,000	4.2
45 " " "	7,000,000	280,000	4.
46 " " "	15,730,000	1,910,000	12.1
47 " " "	12,625,000	2,070,000	16.2
48 " " "	8,832,000	1,260,000	13.
49 " " "	14,616,000	1,410,000	9.7
50 " " "	6,000,000	1,440,000	24.
51 " " "	3,099,000	630,000	19.7
52 " " "	3,323,000	792,000	23.8
53 " " "	6,929,000	234,000	3.4
54 " " "	1,217,000	500,000	42.
55 " " "	10,750,000	1,612,000	15.
56 " " "	17,417,000	1,742,000	10.
57 " " "	17,260,000	1,726,000	10.
58 " " "	1,601,000	561,000	35.
59 " " "	4,916,000	1,573,000	32.
60 " " "	2,150,000	727,000	34.
61 " " "	11,500,000	1,150,000	10.
62 " " "	1,037,000	567,000	54.5
63 " " "	1,227,000	484,000	42.5
64 Plunger, outside packed	2,000,000	194,000	9.7
65 " " "	1,146,000	41,000	3.5
66 " " "	8,960,000	1,702,000	19.
67 Rotary. . . . .	3,200,000	530,000	16.7

The names of the various plants at which these rates of slip were discovered are not included in the table for reasons which are apparent from a glance at the last

column thereof. Some of these engines made a very creditable showing, one having as little slip as 1 per cent., another 2 per cent. It is not to be wondered at, however, that a superintendent whose pumps are found with a slip of 60 to 73 per cent. is not anxious to have the fact published. It seems almost inconceivable that a pump which should deliver, and theoretically was delivering, about 26 million gallons per day was actually delivering but 35 per cent. of this and expending a considerable part of its energy in producing heat by a churning back and forth of the remaining 65 per cent.

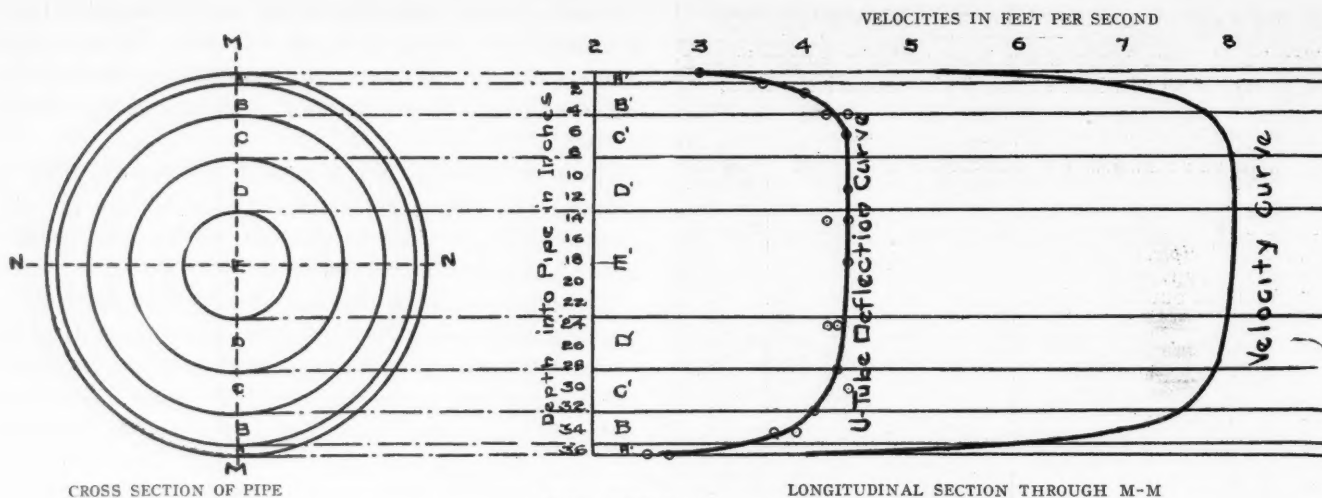
These 67 cases should not perhaps be taken as typical of all pumping engines, since in many of them certainly the suspicion that the slip was greater than it should be or that there was some unknown loss was the reason for the making of the test. It is certainly interesting, not to say startling, however, to note that there were at least 25 American cities where the pump slip exceeded the ordinarily assumed 5 per cent., and especially that in 25 cases the slip exceeded 20 per cent., and exceeded 50 per cent. in five cases.

While it may be unfair to the classes of pumps represented, it is nevertheless interesting to compare the relative slip in pumps with inside-packed and those with outside-packed plungers, and also in the several classes of engines represented. The vertical, triple, crank and flywheel pumps tested were of the outside-packed plunger type only, and showed an average slip of 10.6 per cent. Of the vertical, compound, crank and flywheel engines, three tests were made of those having inside packed and three of those having outside packed plungers; the average slip of the former was 30.1 per cent., and of the latter 52.9 per cent. Of the horizontal, duplex, crank and flywheel pumps, nine had inside-packed plungers and six outside-packed; the average slip of the former being 8.9 per cent. and of the latter 14.65 per cent. Of the horizontal, duplex, direct-acting pumps, 25 had inside and 3 outside-packed plungers; the average slip of the former being 19.2 per cent., and of the latter 10.7 per cent.

Comparing the pumps by types, the greatest slip was found with the vertical, compound, crank and flywheel pumps; the next greatest with horizontal, duplex, direct-acting; the next with horizontal, duplex, crank and flywheel, and the least with vertical, triple, crank and flywheel pumps. No class of pump, however, was without instances of slip greater than 50 per cent., and only the class first named above was without instances of pumps having a slip of 4 per cent. or less. It is but fair to say that, as far as we know, there were but three pumps of the vertical, compound, crank and flywheel type tested; too small a number on which to base a fair comparison.

The weight of the table presented above must, of course, depend largely upon the reliability and accuracy of the tests by which the figures were obtained. This table was furnished us at our request by Mr. E. S. Cole, manager of the Pitometer Company, and the tests were made by his assistants, with pitometers especially arranged for measuring slip.

The pitometer is familiar to most water works super-



CROSS SECTION OF PIPE

LONGITUDINAL SECTION THROUGH M-M

Ring	Area	Mean Altitude of Hollow Cylinder.	Volume of Cylinder.
A	0.764	5.71	4.36
B	2.029	7.30	14.81
C	2.094	7.88	16.50
D	1.637	8.03	13.14
Circle E	.545	8.04	4.38
	7.069		53.19

$\frac{53.19}{7.069} = 7.52$ , Mean Altitude of Solid, Hence Mean Velocity in Pipe.  
 Velocity at Gauging Point (Center) = 8.05 Feet Per Sec.  
 Pipe Coefficient =  $\frac{7.52}{8.05} = .934$

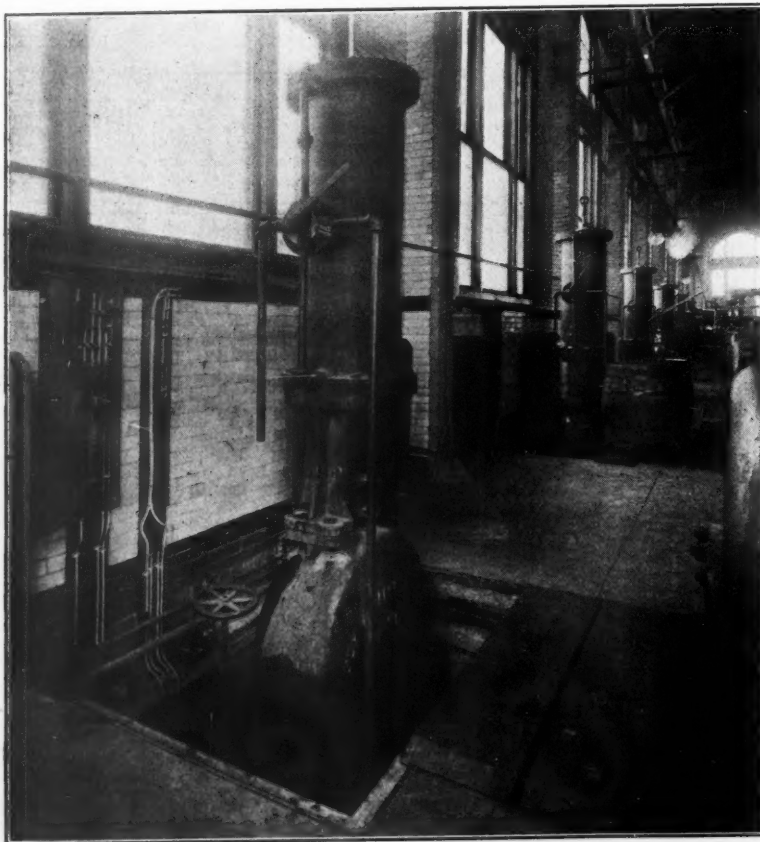
## DEFLECTION AND VELOCITY CURVES. ILLUSTRATION FROM ACTUAL PRACTICE

intendents in connection with the investigation of leakage and other losses from water mains. When it is to be used as a slip indicator, the first thing to be considered is the location of the 1-inch corporation cocks by which the rod-meter is admitted to the main. These are set at the first convenient tangent beyond the pump and, if possible, within the building walls, using a regular pipe tapping machine. The taps are set 90 degrees apart and in the same pipe section.

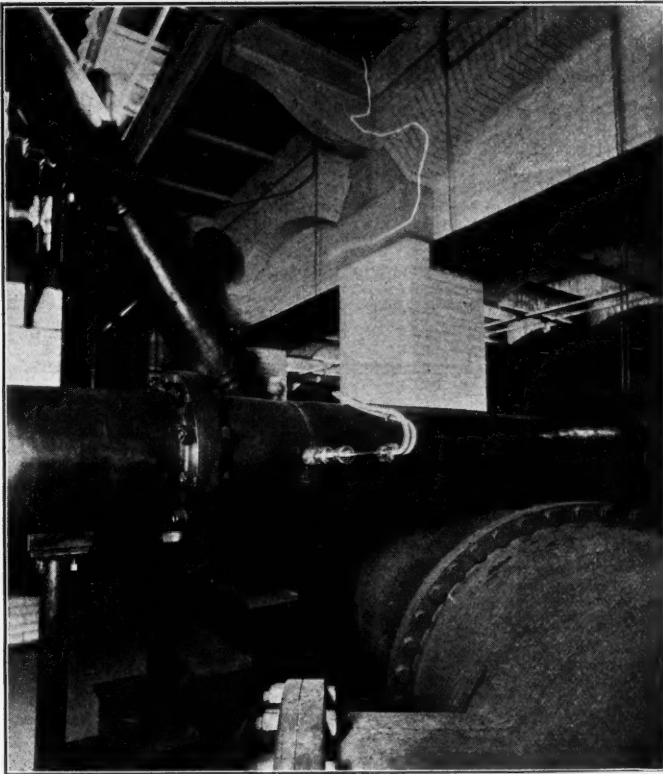
The velocity traverses of the discharge main are then made by taking a series of U-tube deflection readings across two diameters of the pipe, from which readings the deflection curves are plotted. From these deflection curves, by use of the pitometer calibration tables, the corresponding velocity curves are plotted and from these we read the velocity where each circle is crossed by the traverse on the diameters M-M and N-N. There are thus four determinations of the mean velocity at each ring, and the mean of these four results is taken as the mean velocity at the ring. The method of computing the average rate of flow in the whole pipe, by summing up the volume of each ring, is shown in connection with the diagram herewith. The center velocity is obtained directly from the curve, and with the orifices located at this point the mean velocity may be had at any time by using the ratio of mean to center velocity as computed from the traverse. This ratio is practically the same at all rates of flow in the same main and at the same cross-section, although it will vary, roughly, from 0.70 to 0.95, according to the relative smoothness of the interior surface of the main.

The preliminary work now having been completed the rod-meter is inserted through the tap and secured with its orifices at the gauging point, or center, the meter tubes are connected with the wall-board and its manometer, the air is carefully blown out of the connecting line by means of cocks provided for that purpose, and preparations are complete for the slip test, which is made as follows:

The pump counter is read on an even minute, as shown by the second-hand of a watch. Beginning at the same minute, the U-tube de-



PITOMETERS INSTALLED AT TORRESDALE FILTERS, PHILADELPHIA



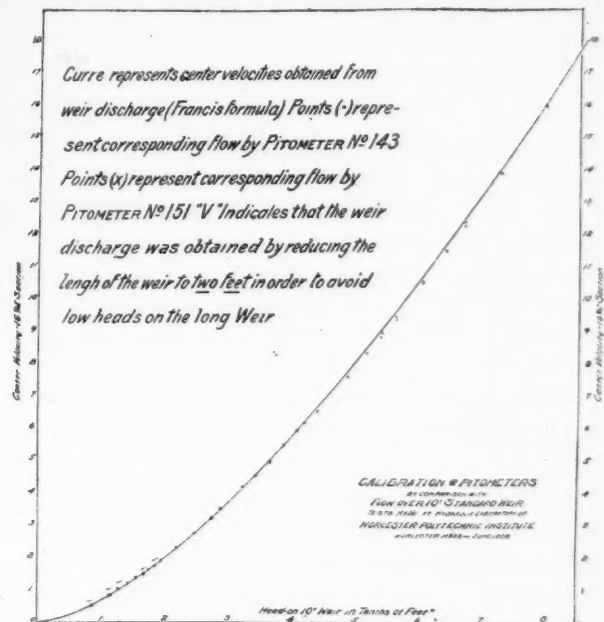
PITOMETER SET IN DISCHARGE MAIN, WASHINGTON, D. C.

flections are observed, and the average readings taken for each of ten consecutive minutes; at the end of which time a second reading of the pump counter is made. The difference between the first and second counter readings divided by 10 gives the average rate of the pump in revolutions per minute, and with the plunger displacement gives the nominal discharge in gallons per minute. The average of all readings taken from the U-

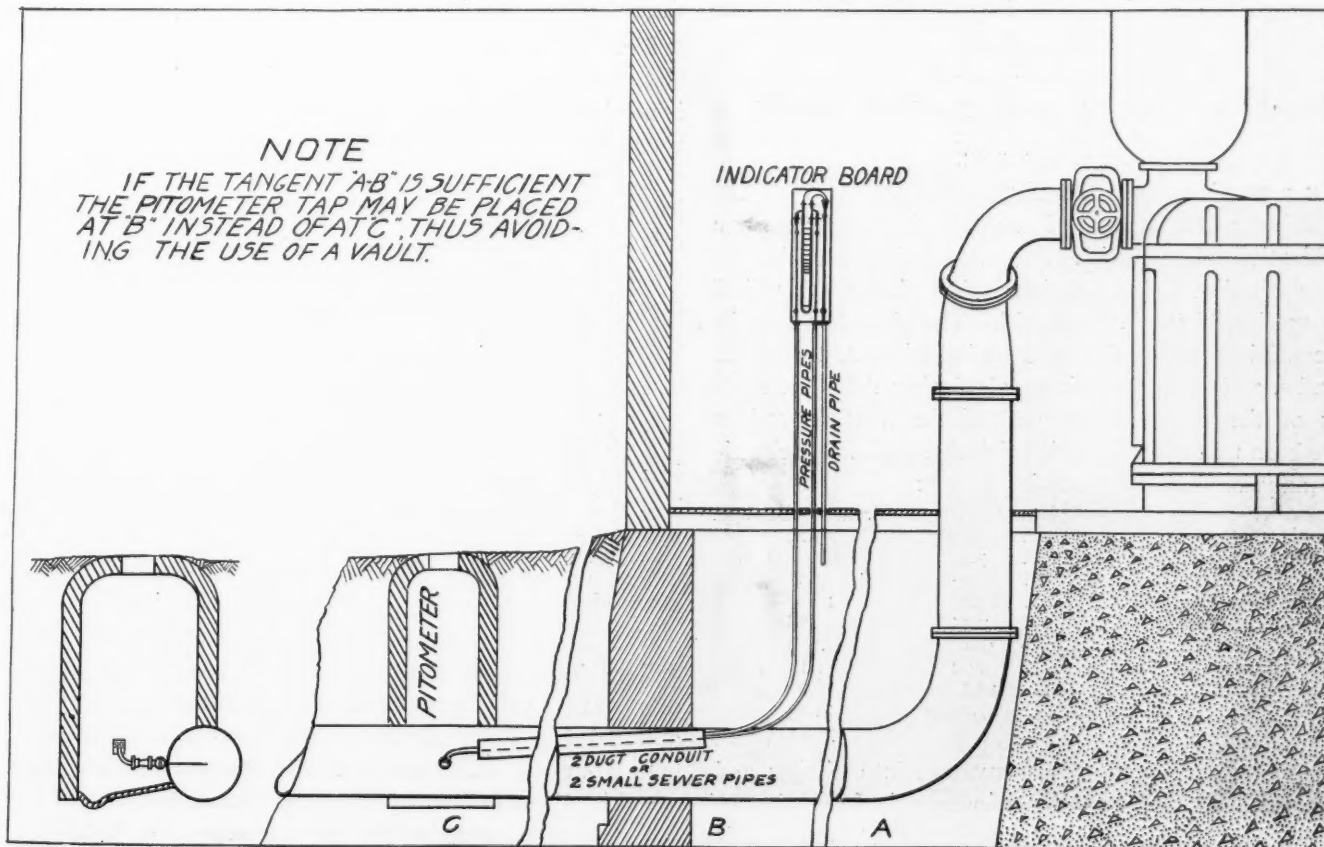
tube scale gives the average actual rate through the pipe in gallons per minute and the difference between the actual discharge and the calculated discharge shows the slip, which may be expressed in per cent. or in gallons per day.

The scale by which the U-tube deflections are read is graduated to show the actual flow in gallons per 24 hours for the given size of discharge main and its particular ratio of mean to center velocity.

The accuracy of the pitometer tables rests upon careful calibration tests made at hydraulic laboratories, as for example, that of the Worcester Polytechnic Institute, where a 40-inch steel pipe discharges over a standard 10-foot weir. Many comparisons between the readings



COMPARISON OF PITOMETER AND WEIR READINGS



GENERAL ARRANGEMENT OF PITOMETER CONNECTIONS



of weir and pitometer at various rates of flow, ranging from 0.5 foot per second to 15 feet per second, have been made and the corresponding U-tube deflections noted. Thus the pitometer tables are based upon actual use rather than theory, although we find that the pitometer orifices as used by us follow closely the formula  $V = 0.84\sqrt{2gh}$ . With the specific gravity of the liquid in the U-tube of 1.25,  $h$  is  $\frac{1}{4}$  the U-tube deflection in feet.

The cut shows how closely the pitometer measurements agree with the weir curve, the weir discharge being calculated by Francis' formula.

Owing partly to the ease with which the above-described indicator can be installed, it has been used for measuring the slip in a considerable number of pumping plants in the United States and Canada, including Washington, Harrisburg, Chicago and several other large cities. In most of these plants it is set up permanently in the pumping station and readings are taken as frequently as it may be desired to check up the slip, which is in many cases once a day, since such readings take but a few moments. Other methods can be used for making such measurements, however, and in some cases might be preferable to the pitometer. Possibly the most direct method is to install a meter on the discharge main not far from the pumps and make frequent comparisons between the quantity passed by such meter in a given time—say, twenty-four hours—and the amount indicated by the pump counter and plunger displacement as being theoretically discharged. There are several meters which can be used for this purpose on small mains; but as the size of these increases beyond 12 to 15 inches the ordinary meters become very expensive, and possibly the Venturi meter may be found cheaper, although for quite large mains the expense of even this is considerable.

### SEWAGE PURIFICATION AT SANTA MONICA

By C. B. IRVINE

In a previous issue the MUNICIPAL JOURNAL printed an article on the subject of magneto-electrolytic sewage purification plant which was then being installed at Santa Monica, Cal. This is the first plant of this kind in America, if not in the world. The plant has been in successful operation during a period of more than four months, and at frequent intervals during that time samples of the crude sewage and of the treated product have been taken by Frederick Salathe, Ph.D., for chemical analysis, with the following result:

	Raw Sewage.	Treated Sewage.
Organic matter .....	2.09	1.26
Nitrates .....	7.4	4.4
Nitrites .....	—	3.0
Phosphates .....	17.4	16.0
Lime .....	7.35	4.78
Magnesia .....	9.0	4.98
Oxide of iron .....	2.72	1.1
Sulphuric acid .....	14.3	16.2
Chlorine .....	27.7	11.03

The chemical analysis shows that the nitrates are reduced and are practically converted into nitrites and ammonia. By the formation of ammonia from nitrates the nitrogen is changed into an immediately available form, readily assimilated by plant life, and therefore

more desirable as a fertilizer than in the form of nitrates or nitrites. Phosphates are not decomposed to any extent by the electrolytic action, but they are held in a condition of ready assimilation by plant life. Lime, magnesia and iron are reduced by the process. The electric current decomposes the salt (chloride of sodium) contained in the sewage. The sodium which forms on the cathode is converted into hydrate of sodium, which saponifies fatty acids contained in the sewage by forming soluble soaps. The chlorides on the anodes are decomposed and the chlorine gas is set free in a nascent state. While one part deodorizes the water the other part forms ferrous chloride, oxychloride of magnesia, and chloride of lime. The ferrous chloride is decomposed, setting free nascent chlorine and producing ferrous hydrate, which is readily oxidized to ferric hydrate, which is the main active element to precipitate the albuminates.

The resultant coagulum greatly assists in clearing the water by precipitating any suspended matter contained therein. Thus, all substances that are liable to undergo putrefaction are converted into an insoluble state and therefore made immune to secondary fermentation or putrefaction.

A part of the iron salts which are liberated from the electrodes is precipitated by the sulphuretted hydrogen as insoluble sulphide of iron. In the decomposition of the water the free oxygen forms as an electro-negative body on the anode, the hydrogen as electro-positive on the cathode. Free oxygen and hydrogen in a nascent state in the presence of organic bodies produce peroxide of hydrogen, which spontaneously oxidizes to carbon dioxide organic substances or bacteria present. Nitrogenous organic substances are decomposed and oxidized by the free or nascent oxygens, and can therefore produce no fermentation or putrefaction in the effluent.

Mr. Salathe says the electrolytic process is strictly an electro-chemical process, in which the chemical action is produced by gases in a nascent state, which therefore act upon the sewage in the most powerful manner. In a nascent state gases such as oxygen, ozone, chlorine or hydrogen act upon organic and also upon inorganic salts in an intensified manner, being readily combined with the products mentioned. By such treatment with nascent gases formed in this process the sewage is rendered neutral.

The oxychlorine of magnesia and lime acts chiefly as a deodorizer and disinfectant and destroys bacteria. This destruction is accomplished not only by the chlorine, but to a large extent by the nascent oxygen or ozone. There is also free sulphuric acid formed by oxidation of hydrogen sulphide during the electrolytic action, which, in a quantity of .02 per cent, is known to destroy cholera bacteria.

The Santa Monica plant has a capacity of 500,000 gallons daily. It is operated at a cost for electric energy of about \$1.50 per twenty-four hours, the current required being about 1 3-5 volts and 500 amperes when both troughs are in operation. These troughs or chutes are thirty feet in length and each is supplied with ten sets of electrodes through which the sewage passes in a continuous stream, discharging into the ocean.

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DECEMBER 16, 1908.

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## Electrolytic Sewage Disposal

ON another page are stated some of the results obtained by the application of electricity to sewage purification at Santa Monica, Cal. The tests apparently were not sufficiently complete or numerous to be at all conclusive, nor are definite costs given. In a recent discussion on sewage disposal before the League of California Municipalities, City Engineer Bromfield, of San Mateo, stated that one defect in this system was that its action was so rapid that solids carried by the sewage were not reduced, but passed into the effluent practically unchanged. Consequently, he and others present believed that in those cities where the handling of solids in the sewage is the main difficulty this system would be inadvisable, unless filter beds or septic tanks, also be employed.

## Emergency Pumping Plant

AMONG the cities which suffered in their water supply by the drought of the past fall was St. Albans, Vt., whose reservoir was completely emptied, compelling the adoption of some method of supplying water for fire protection at least, if not for household purposes. Fortunately the city is located on the shores of Lake Champlain and an abundance of water was available, although its quality was questionable.

In this emergency the City Council purchased a Fairbanks-Morse 18 x 27 x 7 x 18 pot-valve duplex steam pump having a capacity of 300 gallons per minute. This pump was placed about 100 feet from the edge of the water in the lake, and a 6-inch cast-iron main 11,000 feet long for conducting the water to the reservoir was laid in four days by the water works superintendent, Ernest Forlin, this line being laid on the surface of the ground most of the way. Connected to the pump was a suction line 500 feet long of 8-inch wrought iron pipe, in which line were three short-turn elbows and also a check valve which opened but half way. The actual lift from the water surface in the lake to the pump was about 19 feet; but the section of the suction pipe nearest the pump was 20 inches higher than the pump at its outer end, where it was connected by a short elbow to a vertical section, at the foot of which was another similar elbow and the check valve; and the elbows and check valve together with the friction of the pipe increased the suction lift to approximately 30 feet. This was so near the maximum lift theoretically possible that the pump failed to work satisfactorily and after endeavoring for four days and nights to adapt the construction to the conditions so as to produce satisfactory results, advice was asked of Mr. Wm. Perry, a mechanical engineer of Montreal.

He immediately came to the ground in person, and decided that the only way to meet the difficulty was to so change the suction line as to reduce the friction to a minimum. The line was considerably shortened by constructing a suction well with its center 50 feet from the pump, in which the suction pipe proper ended. This well was connected with the lake by a line of pipe about 450 feet long, carried out to deep water at the end of a wharf used as a steamboat landing; the most of this being in fact the suction as originally laid. The well, which is ten feet by six inches in plan, was carried with its bottom eight feet below the water level of the lake. The suction rises vertically from this, having a strainer and check valve at its foot, and reaches the pump with but three bends, one 90 degrees and two 45 degrees, all long radius bends; the suction at no point rising higher than the pump. The joints were all flanged and the edges were peaned with round nose hammers.

During 24 hours of strenuous work the suction well was constructed by the water works superintendent and the suction line was connected up by Mr. Perry and four assistants. The suction when completed was tested under 150 pounds pressure and found to be perfectly tight; and at the end of the time stated water was pumped through the main under a working pressure of 250 pounds.



## STREET LIGHTING IN SAN FRANCISCO

### Nearly Four Hundred Free Lights Furnished by Railroad Companies—Ornamental Lighting—Rates for Lighting Streets and Buildings

ONE of the advantages of electric street lighting which was appreciated by San Francisco after the great fire, was that of the rapidity with which the machinery, wires and lamps could be obtained, set up and installed, enabling them to quickly replace to a considerable extent the 2,645 lamps which were destroyed at that time. Immediately after the fire it had available 2,465 gas and 1,077 electric lamps in the entire city. The number of arc lights was increased to 2,200. The gas service also was increased, and 5,000 gas lights are now in use. In addition to the lighting paid for by the city and county, the city has made arrangements by which the United Railroads, through the lighting company, and under its franchise agreement, is lighting free of charge to the city, Market street from Ferry to Valencia and Sutter street from Market to Van Ness, a total of 300 arc lights. In addition another railroad company is similarly supplying the city with 76 free arc lights.

The lighting of the streets and public buildings is paid for by a special fund. Bids for this are received each year from the lighting companies in accordance with specifications prepared by the city's experts. These provide for an all-night schedule, the exact hours for turning on and shutting off being specified before hand in monthly tables. For instance the time of turning on Nov. 19 was 5:32 P.M., which was gradually advanced to 5:25 P.M. Nov. 30; and the time of shutting off was 5:59 A.M. on the former date and 6:10 A.M. on the latter. Citizens are requested to co-operate with the city and the lighting company by reporting any variation from this schedule. Every patrolman also is directed to report all outages, which reports are turned into the central police headquarters every morning and by them forwarded to the lighting companies for immediate action. Such outages are deducted from the lighting company's bill each month.

There is a movement on foot for adopting a more ornamental method of lighting the city streets and certain districts have presented the city with ornamental poles for this purpose. While these do not give as much light as the ordinary arc lamps, their appearance is much in their favor when placed close together. Specially noticeable is the method adopted in Filmore street, in which there is an elaborate arrangement of intersecting arches at all street corners. Altogether, for the area covered, San Francisco claims to be the best lighted city in the United States at the present time. They are assisted in this by the low rates which they have obtained from the light companies, which are given in the table at the end of this article.

In comparing these figures with those in other cities it should be borne in mind that labor and many of the materials used are much more expensive in San Francisco than in most of the eastern cities. The annual cost for municipal lighting at present is \$325,000.

### Lighting Rates Paid by City of San Francisco

STREET LIGHTING.		Per night
4626 gas lamps (single top).....		\$0.06548
327 gas lamps (triple top, .05 per lamp).....		.15
2046 arc lights .....		.20712
120 arc lights (Saturday nights only, on Van Ness avenue, extinguished at midnight, October charge, 3 nights) .....		.50
40 arc lights, on Mission and Valencia streets (extinguished at midnight) .....		.138
6 arc lights, in Panhandle .....		.19178
10 arc lights, in 5 safety stations, at .41426 per station, or .....		.20713

### LIGHTING PUBLIC BUILDINGS.

(During October.)

Gas, 765,600 cubic feet at.....	.60 per 1000 feet
Electricity, 65,344 kilowatt hours at.....	.04 per K. W. H.

### FIRE STREAM AS ELECTRICAL CONDUCTOR

SOME tests were conducted a few weeks ago by the Pennsylvania Railroad to determine definitely what danger, if any, there was that a fire stream striking a live wire would conduct the current along the stream to the nozzle and so endanger the life of the firemen. There were used in these experiments a trolley wire carrying 525 volts of direct current, and two lines carrying 2,300 volts and 4,600 volts respectively, fed from the alternating current generators at the Altoona car shops. One side of each of these circuits was thoroughly grounded and the fire stream played on the other side, which was suspended in the air and thoroughly insulated. A volt meter was connected between the nozzle and the ground to measure the difference in the potential of the two.

When a stream was played from a 5/8-inch nozzle onto the 525-volt trolley wire it was found that when the nozzle was 7 feet 5 inches from the wire the difference in potential was 20 volts; and this increased as the nozzle approached the wire until at 2 feet 2 inches it had reached 70 volts, and at 7 1/2 inches it was 210 volts. As discomfort would not be felt by a nozzle-man until the potential of 50 or 60 volts was passed, it would appear that if more than 3 or 4 feet from the wire there would be no cause for alarm. It was also concluded that no harm would occur to one holding the nozzle within but a few inches of wire if standing on a ladder or otherwise insulated from the ground.

The nozzle was brought within 3 1/2 feet of each of the two lines carrying alternating current, but without producing any effect which was indicated by the volt meter, although when the nozzle was touched with the hand a slight tingling was noticed. A similar series of experiments on the following day gave the same results. In each case a solid stream of water was turned full against the wire.

Other experiments made with chemical fire extinguishers showed that when a solid stream was played upon a high potential wire, the nozzle and wire being but 9 inches apart, there was a difference of potential between nozzle and ground of 1,500 volts when the wire was carrying 2,050 volts.

These results would apparently indicate that in ordinary fire service there is little danger to nozzle-men from broken live wires which do not come in actual contact with the nozzle or themselves. With unbroken wires the damage would ordinarily be still less.



## NEWS OF THE MUNICIPALITIES

**Divers Subjects of General Interest and Their Treatment by City Councils and Officials—Streets, Water Works, Lighting and Sanitary Matters—Police and Fire Items—Government and Finance**

### ROADS AND PAVEMENTS

#### Sidewalk Work in Bridgeport

Bridgeport, Conn.—Mayor Lee is well satisfied with the work which has been done by Public Works Director Biltz in the improvement of sidewalks in all sections of the city accomplished as the result of the campaign against defective sidewalks begun last spring. During the summer new sidewalks, aggregating in value approximately \$30,000, were laid. The city's appropriation was small, only \$3,000 having been allowed by the Board of Apportionment to do the work where property owners failed to comply with orders from the director to repair sidewalks. An inspector was kept on the work all summer, and he reported hundreds of defective sidewalks and served notices on more than 1,000 property owners to make repairs.

#### To Put Brick to Test

Cleveland, O.—The County Commissioners of Cuyahoga County decided that every carload of brick used for county road repair hereafter will be tested. From each lot a number of average bricks will be selected and tested. The action comes as a result of a discovery recently made that 120,000 bricks bought to repair Lorain, Berea and Wooster roads, west of the city, contained many imperfect ones.

#### Early Petitions for Grading

Davenport, Ia.—Mayor Scott has announced that all citizens who want streets and alleys graded should file petitions to that effect with the City Council before January 1. The indications are that more work of this sort will be asked for than can be done and those applying first will receive the first consideration.

#### Experience Proves Value of Asphalt Filler

Houston, Tex.—Having demonstrated that brick pavement is longer-lived, less susceptible to wear and tear, and much better adapted to travel, when grouted with asphalt, the city has decided to grout all its brick pavement hereafter. The two blocks of San Jacinto street, between Capitol and Walker, which were filled with asphalt at the time of their paving, have proven the worth of this work.

#### Petitioners May Waive Claims for Damages

Knoxville, Tenn.—Mayor Brooks has asked Council to consider the matter of claims for damages for changes in grade made in connection with the laying of street pavements. He says that the property owners petition for the pavement, that their property is enhanced in value on account of its construction, and when the work is finished they ask damages for changes in grade. He suggests that Council pass no more improvement ordinances unless the property owners waive all claims for damages of this sort.

#### Damage Suits the Result of Bad Pavements

Norfolk, Va.—In his annual message Mayor J. G. Riddick says that the condition of the streets deserves the most careful consideration, as many of them are of asphalt, and are sadly in need of repair. They are so rapidly going to decay that they should by all means have immediate attention. In his opinion, the city should either secure a repair plant or make a contract for the necessary repairs to these streets. The question of suits against the city by reason of faulty streets and sidewalks has in the past few years been a matter of considerable moment recently. The question of paving in front of vacant lots should be settled in order that the sidewalks may be uniformly paved, and some rule adopted covering the matter of the original laying of sidewalks by property owners.

### Permanent Pavements Instead of Macadam

Lexington, Ky.—Mayor Skain is advocating the creation of a Board of Public Works to provide the city with permanent pavements. Now the city is spending \$70,000 a year in macadam streets which require repairs within a year. A bond issue of \$250,000 might be made and interest and sinking fund provided out of the usual appropriation, so that the city might secure permanent pavements without any increase of expense.

### Pleasant Execution of Street Obstruction Laws

Perth Amboy, N. J.—Mayor A. Bollschweiler has written a letter to the Building Trades Association calling the attention of the members to the city ordinance requiring a permit for allowing building material to remain on a street more than 24 hours. He asks the association to use its influence with its members in order that the execution of the law may be as light and pleasant as possible.

### Special Fund for Work of Derelict Contractors

Seattle, Wash.—In order that the city of Seattle may take over contracts for street improvements on which contractors have been derelict, the Finance Committee of the Council will introduce a bill creating what is to be known as a revolving fund of \$20,000 to pay the expenses of the municipality in carrying on such work as may be taken out of the hands of contractors. This fund will be reimbursed as rapidly as it is depleted from the general fund and reimbursement will come through estimates allowed by the engineering department as each improvement progresses.

### SEWERAGE AND SANITATION

#### Doesn't Fancy Drainage Plan

Buffalo, N. Y.—In a report on the Erie and Ontario Sanitary Canal, Commissioner of Public Works F. G. Ward finds much to criticize and little to commend in the scheme to prevent the pollution of the Niagara River. To carry out the plan would necessitate reversal of the flow in scores of sewers, upsetting the system and involving enormous expense. The report concludes with the advice to the towns below on the river to purchase their water from Buffalo. This report did not discourage representatives from the Chambers of Commerce of Niagara Falls, Lockport and the Tonawandas from calling on Mayor J. N. Adam and asking him to join them in petitioning the Federal Government to pass a statute prohibiting the disposal of sewage in any inland lake or tributary.

#### Investigating Milk Supply of Leadville

Leadville, Col.—Leadville's milk supply, the purity of which has been under suspicion for some time, is undergoing a rigid investigation by the State Board of Health. E. B. Couter, of Denver, Chief Inspector of Food and Drugs, met Mayor Rose and the City Marshal, and together they purchased samples of milk from many milkmen and shipped them to Denver for analysis. Suspicion had been directed to Leadville by the discovery that chemicals used to adulterate milk had been shipped in large quantities to the city.

#### All Milk to Be Certified

New York, N. Y.—The Board of Aldermen is considering an ordinance providing for the better regulation of the milk traffic. The measure, which was presented by Alderman B. W. B. Brown, will, if adopted, prevent the sale in this city of milk and cream not pasteurized that comes from the dairies where the herds are not certified by the Board of Health to be free from tubercular diseases.

#### Would Ignore State Sewage Regulations

Topeka, Kan.—There are 8 or 10 cities of Kansas which have failed to comply with the law enacted at the last session of the Legislature requiring cities to file with the State Board of Health full plans of their city sewer system. The Board is planning to bring actions against these cities to compel them to furnish the plans, and further to collect the \$500 penalty which is provided in the law for failure to do so.

#### Milk Reform in Kansas

Topeka, Kan.—The State Board of Health has just completed a series of tests of milk supplied to many of the cities of the State. The smaller towns have the best supplies. Among the larger cities Topeka has the best supply and Kansas City next. Regulations will probably be issued requiring that all milk supplied to cities be immediately cooled by artificial means when it is fresh.

#### Health Crusade Continues at Washington

Washington, D. C.—The Health Officer continues to war on milk dealers engaged in the illegal practice of adulteration. He has instructed his food inspectors to pay close attention to all milk dealers and to prosecute wherever possible. These prosecutions will be under the pure food law. In a few days inspectors will be directed to visit all confectionery stores and collect samples of candies and other articles offered for sale. If they contain any impurities the proprietors will be prosecuted. Attention is also to be paid to butter, fish and game.

#### WATER SUPPLY

##### Plan to Control Water Pressure at Fires

Houston, Tex.—The Water Department is perfecting plans for the control of the water supply during conflagrations. Maps are being prepared for the use of the Fire Department, showing the distribution mains and the location of valves. In case of necessity some of the valves on pipes supplying parts of the city will be closed so as to increase the pressure in the fire zone.

##### Makes Deductions from Water Company's Bill

Utica, N. Y.—Comptroller Reusswig has deducted \$3,357 from the annual bill, amounting to \$42,501, of the Consolidated Water Company, in accordance with the findings of C. H. Prescott, an expert accountant. The principal item of the bill is interest on construction, which, according to the contract, is paid by the city, and a lump sum of \$10,000 for the maintenance of proper fire protection within a certain district. The principal reduction is based on interest charges made for construction within the district for which the lump sum is paid. Other reductions are made for overcharges in cost of labor of construction as compared with figures obtained regarding similar work in 30 American cities. A deduction is also made for lead for joints charged in excess of the amount which is believed to be necessary.

##### Water Company Pays First Tax in Quarter Century

Warwick, R. I.—Herbert W. Barber, Town Treasurer and Tax Collector of Warwick, has the distinction of being the first official to receive payment of a tax from the Warwick and Coventry Water Company since its incorporation, nearly 25 years ago. It secured from the old Council of Lapham, now Warwick, exemption from taxation "until such time as the company should pay a dividend." An assessment was first levied in 1896 and the matter went to the courts. Two contentions were always made by the company's representative as a reason why payments should not be made, the exemption granted by the Lapham Town Council, and, second, that the assessment was improper, as it did not describe the property in proper manner. The first contention was upset by the courts three years ago. The second contention was upheld, and now the town has made an assessment in the proper manner and been rewarded by the receipt of \$540.

#### Leak in Main Feeds Brook for Many Years

Newburgh, N. Y.—When the city has been short of water and special arrangements for pumping from Washington Lake were made, a recent discovery shows that a large amount of water has been going to waste. A brook which has never been known to grow dry stopped when water from a nearby main was shut off and the fact developed that the brook was fed from a leak in the main. Former Water Commissioner McCord estimates the waste of from 300,000 to 500,000 gallons a day.

#### Marion Will Have Plenty of Water

Marion, Ala.—Marion now has assurance of plenty of good water. The progress made on the new well gives every indication of furnishing 200 gallons per minute, while the contemplated repairs on one of the old wells will give 150 additional gallons per minute, making a total of 350 gallons, which will be a sufficiency of water for many years.

#### Supervisors Act on Election to Acquire Water Supply.

San Francisco, Cal.—Three decisive steps have been taken by the Board of Supervisors towards the acquisition of the Hetch-Hetchy and Lake Eleanor sources of water supply. A resolution was passed declaring the result of the election in which the voters declared their assent to the acquisition of the properties. Another resolution confirmed the appointment of Judge C. A. Lindley as special attorney to examine the titles and rights which the city proposes to acquire. The third resolution provides for the transfer of water rights which were acquired in the name of City Engineer Manson. Plans for the foundation of a metropolitan water district similar to that which includes Boston and neighboring cities is being discussed.

#### Will Sue Water Company for Pure Drink

Schuylkill Haven, Pa.—Because their drinking water, tested at Harrisburg by State chemists, has been found to contain typhoid fever germs, citizens will bring prosecution against the Schuylkill Haven Gas and Water Company to compel that corporation to furnish pure water. A petition guaranteeing the expenses of this proceeding at court is being circulated and numerous signed.

#### Water Consumption Is Checked Up

South Bend, Ind.—The Board of Public Works has ordered a house to house check on the water works records. Many new consumers have been added the past two years and it is desired by the Board that a special tabulation be made. It is suspected water is being used for which the city receives no return and the plumbing fixtures of the houses will be inspected.

#### Well Water Found to Be Impure

Washington, Ind.—Basing his convictions on analyses of the water supply from dug wells of this city made by the State Chemist, Dr. A. I. Donaldson, Secretary of the County Board of Health, has pronounced the water supplied by wells unwholesome and unfit for use, and issues a statement warning the citizens against its use. The public water supply has been found to be free from impurities, and is recommended for use in preference to the well water.

#### Mayor Blames Water Board

Wilmington, Del.—Mayor Wilson, who has been conducting an investigation into the affairs of the Water Department, asserting extravagances, has finished his labors and issued his report of the result. He holds that the Department, instead of being a money producer for the city, has been a burden from 1904 to 1907, and its deficit was four times greater than the total deficit in the 20 years of its previous existence; that the Department had no comprehensive knowledge of running a water plant; that the system of accounts had been of a purposeless character, and that for four years the members were in entire ignorance of the bonded indebtedness of the Department; that since 1883 the Board has failed to keep a record of plant equipment and entirely ignored inventories.



**STREET LIGHTING AND ELECTRIC POWER****War in Lighting Rates**

Fort Wayne, Ind.—A warm fight between the city administration and the Fort Wayne & Wabash Valley Traction Company over the electric lighting rate is pending and a rate war in commercial lighting is probable. The city has just taken possession of its municipal plant for street lighting, and, finding it has a surplus current, desires to sell it to private consumers at 8 cents a kilowatt, whereas customers of the traction company pay a net rate of 10 cents.

**Municipal Lighting Plant Secretly Installed**

Orange, N. J.—A small lighting plant has been installed to illuminate the new water and sewage pumping station without the knowledge of the Mayor and without special appropriation. It will supply 60 incandescent lights to the building in the place of 29 furnished by a private company. The most expensive item in the plant, which cost \$1,110, was the steam turbine, which cost \$480. The chief engineer of the pumping plant thinks the lighting outfit will save the city \$70 a month.

**Cost of Manufacturing Gas in New York**

New York, N. Y.—In a report on the gas supply, the Public Service Commission gives the following estimate of cost of gas as furnished by different companies in New York City. It is stated that the average cost is 58.15 cents per 1,000 cubic feet. Of this 32.33 cents is charged to the actual cost of manufacture, 7.83 cents to distribution, 9.11 cents to commercial and general expenses, 5.97 cents to taxes, 1.14 to uncollectable bills, and 1.77 cents unaccounted for. It is pointed out by the Commission that the companies insist that in fairness to them 10.17 cents should be added for depreciations, contingent and renewal expenses, making a total cost, therefore, of 68.82 cents per 1,000 cubic feet.

**Outages of Lamps Decreases**

Rochester, N. Y.—There were 1,846 street lights reported out during November, 1907, and only 945 in November, 1908, a decrease of 901, according to the figures compiled by the city and the Rochester Railway and Light Company. The company and the city have made an effort to reduce the number of lamps not burning, and the figures show the result. During November, 1907, the number of hours the lamps were reported as not burning was 8,971, while during November, 1908, the number of hours was 3,270, a decrease of much more than 50 per cent. The company maintains six gangs of two men each, and six wagons, that are employed all night every night in seeing that the street lamps are kept burning.

**Amenities Between Municipal and Natural Gas People**

Wheeling, W. Va.—The city has asked for an injunction to restrain the Natural Gas Company of West Virginia from selling gas to citizens of Wheeling to be used for illuminating purposes. The city names 282 families that are using natural gas as an illuminant, but the number is said to be twice as large and rapidly increasing. The city claims that the revenues of its plant are suffering to such an extent by reason of the change of its customers to the use of natural gas that the plant cannot be operated at a profit. The company replies that its contracts with consumers prohibits them from using natural gas as an illuminant. The company pays its respects to the municipal plant, charging mismanagement by petty politicians, the employment of political followers unskilled in the business, and that many more men are employed than are needed. The company further alleges that at various times during the last 10 years the city has bought gas from the defendant company at about 15 cents per 1,000 cubic feet, mixed it with manufactured gas and turned it into the city mains.

**FIRE AND POLICE****Warning Light on Fire House**

Houston, Tex.—City Electrician Clarence George has placed a special electric lamp on the outside of a new fire house for the purpose of warning street car conductors to look out for the apparatus. When an alarm is turned in the lamp is automatically lighted.

**New Police Auto at Work in Louisville**

Louisville, Ky.—The Police Department has received a Chalmers four-cylinder, 30-horse-power automobile, which it will use as a patrol wagon. It was the desire of Col. Haager, Chief of Police, to have a machine that would not in any way attract attention. Two other machines will soon be received. Each will be equipped with a powerful searchlight, in addition to the regular lamps. These searchlights will be used to flash up alleyways and in especially dark places. Probably no city in the country has so many dark, narrow alleys. In chasing escaped prisoners or criminals the police seldom get their man if he gets into one of these alleys.

**Would Make Building Inspector a Fireman**

Manchester, N. Y.—A proposition is being considered to add to the duties of the Building Inspector and make him a member of the Fire Department. He is to familiarize himself with the construction of buildings, especially in the central district, so that in case of a fire he may instruct the firemen as to the best way of getting at a fire.

**Advise Installation of New Signal System**

Minneapolis, Minn.—In his annual report, Superintendent of Police Frank T. Corrison states that the Gamewell signal system, while in good condition, has proved to be inadequate. He proposes a system costing about \$25,000, which will include apparatus by which bells ring and lights show on signal boxes in downtown districts when a general alarm is turned in.

**Would Reduce Tennessee Fire Waste**

Nashville, Tenn.—Plans are on foot for a mass meeting of fire insurance agents and business men of Tennessee, to be held in Nashville next month, to discuss ways and means for the reduction of the fire waste in Tennessee. It is estimated that the fire loss in Tennessee this year will exceed \$2,000,000, and of this total nearly half was without insurance.

**Firemen to Have More Time Home**

Norfolk, Va.—Chief R. F. McLaughlin, of the Fire Department, has been authorized to allow the men to be off duty on every eighth day instead of every tenth, as had formerly been the rule. When the petition from the firemen, asking for the eighth day, was received by the Board, with the recommendation of the Chief, the Board made inquiry of the Departments in several cities regarding the off-time allowed their firemen. Reply to these inquiries have revealed the fact that in each of the cities of Baltimore, Richmond, Washington and Newport News the fire fighters are given more time at home than has been customary in Norfolk.

**Small Fire Loss Due to Building Inspection**

Salem, N. C.—Salem has had a total fire loss during the last 100 years of only \$3,000. The secret of this small loss by fire is the care taken in the building of the houses and stores. A Building Inspector having charge of the inspection of all houses and stores is employed, and care is taken that all flues are correctly constructed. The City Electrician gives a portion of his time to examining all wiring done. The wiring done by any firm in the town has to stand the inspection of the Electrician, and if it cannot do so the work is condemned.



### High Pressure Extinguishes Dangerous Fire

New York, N. Y.—A fire in a storage warehouse containing combustible material, in the district which was considered the most dangerous in the matter of fire hazard, was easily extinguished by the high pressure system. The fire originated from an explosion and the whole building was in a blaze when the Department arrived. It would have been a four or five-alarm fire under former conditions. Two alarms were turned in, but no engines were used—except for the purpose of pumping water out of adjoining cellars. The pressure at the power house was raised to 175 pounds, the highest used so far. A water tower was used and single lines of hose threw powerful streams into seventh story windows. The weight of water broke down the upper floors. In two hours the fire was well under control and it was kept within the structure in which it originated.

### State Control of New York City Police Suggested

New York, N. Y.—A report is being circulated from Albany that an attempt will be made to place the New York City Police Department under State control.

### Police Target Practice in Indiana

South Bend, Ind.—Chief of Police James McWeeny has announced plans whereby the men in the Police Department will get regular target practice in connection with their duties. Workmen have started the new target range, and the third floor of the City Hall is undergoing the necessary changes for target shooting. The range will be 70 feet long.

Richmond, Ind.—Under orders of the Board of Police Commissioners every member of the police force is required to devote certain hours each week to target practice with revolvers. Morton Little not only holds the local championship, but his brother patrolmen believe he is entitled to State-wide recognition as a revolver shot. In two recent matches Little hit the bull's-eye of a target at 30 feet 22 times out of a possible 25. In another trial he hit the target's center five times out of five shots.

### Syracuse Claims Best Fire House in State

Syracuse, N. Y.—A new fire engine house at the corner of West Jefferson and South Clinton streets, which cost \$60,000, and is said to be the best in the State, has been finished. The building is to be the permanent headquarters of a fire engine, hose wagon and water tower. Of modern, fireproof construction throughout, equipped with every practical device for the most speedy and efficient fire service, the building is regarded by the Aldermen who inspected it as a model after which to pattern all future fire houses erected in the city.

### Bloodhounds for Capital Police Force

Washington, D. C.—Satisfied that bloodhounds can be of valuable assistance to the police force of a large city, Major Richard Sylvester, Superintendent of the Metropolitan Police Force, has decided to order two for use, and if the results are satisfactory more will be added later. They will be trained for work in the suburban parts of the city.

## GOVERNMENT AND FINANCE

### Indignant Citizens Demand Commission Government

Birmingham, Ala.—At a meeting attended by more than 2,000 citizens, recent actions of the majority faction of the Board of Aldermen were severely condemned and a demand was made for the resignation of offenders on the Board. One Alderman has already resigned because he has been found guilty, the press report says, of conduct unbecoming an Alderman in connection with the purchase of a tract of land by the city. At the close of the meeting resolutions were adopted requesting Governor Comer, in the event he calls a special session of the Legislature, to include in the call a provision for consideration of the bill giving Birmingham a commission government.

### Buffalo's New Charter Nearly Ready

Buffalo, N. Y.—The proposed new city charter, which is being prepared by the Civic Conference Committee, is to be printed and submitted to the business associations and civic bodies represented in the Conference for their approval or disapproval. The essentially important elements of this charter, as claimed for it by the Civic Conference, are:

Simpler in form, so that there will be less danger of confusion and conflict.

Giving the city the right of home rule on all subjects of purely local nature.

Administrative board composed of heads of departments elected by the people for a term of four years.

Nomination of candidates for municipal office by the voters instead of by the politicians.

Right to recall an elected public servant by a vote of the people.

Referendum on all grants of franchise or other valuable public property.

Merit system to extend to all city employees except the heads of departments.

Providing sufficient salary for heads of departments, so that they can afford to give their entire time to public duties.

### Extends Life of Boston Finance Commission

Boston, Mass.—The Board of Aldermen has unanimously passed a resolution extending the life of the Finance Commission one month, until January 31, 1909, in accordance with a request of the Commission.

### Chicago Revenues Reduced

Chicago, Ill.—Mayor F. A. Busse, at a conference with the heads of departments, announced that economy and retrenchment would be the order of the coming year. In explanation of his position the Mayor presented the officials with this summary, prepared by Deputy Controller Gosse:

	1909 (Estimated).	1908.
Revenue from taxes and licenses.....	\$18,488,952	\$18,240,000
Cash on hand.....	681,316	492,000
Sale of bonds.....	1,500,000	3,450,000
Total resources.....	\$20,666,268	\$22,182,000
Reduction in services.....	1,515,732	

Those who desire to see important improvements carried out may, however, see a ray of hope in the discussions of the charter revision committee on the matter of fixing the bonding power of the city. The city authorities have asked that this limit be so fixed as to give it \$125,000,000 in bonds. The real estate board desires it to be fixed at a much lower rate, and a compromise at \$90,000,000 seems probable.

### Kansas City Has Large Borrowing Capacity

Kansas City, Mo.—Kansas City is in good shape for the several public improvements proposed. The city's net outstanding debt, after deducting cash and bonds in the sinking fund, is now reduced to \$3,751,149. Since the \$3,100,000 of water works purchase bonds have been removed as a charge against the city's debt power it leaves a margin of \$5,905,864 for which the city can now vote bonds.

### New York Charter Will Provide Department of Supplies

New York, N. Y.—The charter revision commission will recommend to the next Legislature the establishment of a new department for the purchase of supplies by the city. This is the result of evidence brought out in recent investigations, showing that the city pays from 25 to 50 per cent. more for its supplies than large private consumers pay, and that contracts for supplies have gone to firms and contractors having no stock and no capital, but political pull. The privilege of purchasing supplies in amount not exceeding \$1,000 has been abused. Vouchers have been made for contracts running into many thousands of dollars, where goods were delivered on identically the same bill, on the same day, from the same cargo or original shipment, but vouched for on a \$999 basis, thus irresistibly demonstrating the manner in which the evasion was effected.

**Ordinance for Board of Pardons and Paroles**

Kansas City, Mo.—An ordinance is pending in Council, prepared at the request of the Mayor by Frank Walsh, a member of the Tenement Commission, who has made an investigation of the best parole systems in force in Eastern cities, providing for a Board of Pardons and Paroles. It provides for a board of three members and a parole officer.

**Los Angeles Charter Amendments**

Los Angeles, Cal.—The City Council has voted to call a special election for February 2, in which the voters in the city will pass upon some of the most important charter amendments yet submitted to them, and which, if adopted, will make vital changes in the present method of municipal government. The election deals with a large number of propositions. It is proposed, among other things, to elect all City Councilmen at large instead of by wards; to grant authority to the city to supply municipal power, heat and illumination by acquiring plants already in operation or by utilizing power to be supplied by the Owens River aqueduct; to grant authority to the city to build railroads, public wharves and docks, both in the city and county, and provide safeguards against dishonesty in the operations of such municipal projects; to provide for primary nominating elections; to increase the pay of the Mayor to \$5,000, and of Councilmen to \$2,400 a year, and many other city officers; to abolish Boards of Police, Fire and Park Commissioners and lodge the power of such boards with the City Council; to extend the life of public franchises from 21 to 35 years, to extend civil service and make many other reforms.

**Des Moines Plan Favored in Salt Lake**

Salt Lake City, Utah.—Endorsement of the idea of government by commission for Salt Lake City along lines similar to the plan now in vogue in Des Moines was enthusiastically and unanimously voted at a meeting of the Civic Improvement League. The action was on a detailed report of a committee which recommended that the number of Commissioners be three. The committee was unanimously of the opinion that the plan of having one Commissioner attend to a department in the city government has a tendency to build up factions in the Board of Commissioners. The united judgment of the Board should be exercised on all important questions. The plan also provides for an Auditor to be elected by the citizens at large. Non-partisan primaries and right of recall are favored. Provisions for protest and referendum regarding ordinances are recommended as having a salutary effect, although the opinion is expressed that they would be seldom used.

**District of Columbia Estimates for Next Fiscal Year**

Washington, D. C.—The estimates of the Commissioners of the District of Columbia for the fiscal year ending June 30, 1910, totaling \$16,176,355.52, as against an appropriation of \$10,133,388.85 for the current fiscal year, have been sent to Congress without reduction by the Secretary of the Treasury. Of this sum about \$11,000,000 is for current maintenance and sinking fund exhibit. The balance is for permanent improvements, which in other cities would be provided for by bond issues. Part of these expenses are sometimes carried by the Federal Government for a number of years and are called a "deficit."

**Wilmington Plans Reforms**

Wilmington, Del.—In order to bring about some reforms in the manner of governing Wilmington, City Council has decided to recommend several bills to the next Legislature. One of them, probably, will recommend the abolition of all the commissions under which the city's affairs are now administered and the placing of the city government entirely within the hands of Council. Another bill will recommend that the present tax system be abolished and the New York system adopted. This system provides for an assessment on the land and also on the building.

**GARBAGE AND REFUSE DISPOSAL****Farmers Fight for Hotel Garbage**

Atlantic City, N. J.—Stockholders of the garbage reduction plant are making a fight to prevent the mainland farmers from collecting garbage, especially from the hotels, for their domestic animals. Mayor Stoy, being obliged to uphold the contract the city has made to turn over garbage to the reduction company, ordered the arrest of all but authorized collectors. In order to bring the matter before the courts a farmer has been arrested and the trial will be fought as a test case.

**Street Flushing Machines Again Used**

Cincinnati, O.—The street flushing machines used by former Superintendent of Streets Neave were put aside when the present Board of Public Service took office. Recently in response to popular demand they were put in service again and six new ones ordered.

**Cover Ash Receptacles**

Indianapolis, Ind.—Dr. Eugene Buehler, Secretary of the City Board of Health, has made special request that all householders keep covers on their ash receptacles. He points out that speed and thoroughness in removing ashes will be proportionate to the care exercised in keeping the receptacles covered. "The heavy rain has soaked the ashes in uncovered receptacles," Dr. Buehler explains, "and a freeze now would tighten the ashes so their dumping would be made impossible. We will remove the ashes as rapidly as possible and care now in keeping the receptacles covered will aid greatly in the work. Householders are expected to keep the covers on the ash receptacles, and a reminder at this time should result in effective cooperation."

**RAPID TRANSIT****Receivers Effecting Economies**

Cleveland, O.—The receivers of the Municipal Traction Company, Warren Bicknell and F. A. Scott, have succeeded in effecting economies in the office expenses of the company. The items on which savings have been made are telephones, office rent and salaries.

**Police Power Superior to Franchise Ordinance**

Portland, Ore.—City Attorney Kavanaugh has advised Council that the police power granted to the City Council by the city charter to regulate a street railway company or any other public service corporation is supreme over any franchise which may be granted by the Council, although in any particular franchise an attempt is made by special provisions to curtail such power. These are some of the things he said had been enforced by ordinance, and declared valid in various cities of the country: Regulating the rate of speed of cars; prohibiting trains and cars from obstructing the streets; forbidding the use of steam in parts of the city streets; requiring a driver and conductor on each car; requiring danger signals; requiring cars to be stopped promptly to protect persons and vehicles on the tracks; compelling the use of fenders; requiring the fencing or enclosing of tracks at certain points; providing regulations at crossings, safety gates, etc.; compelling the use of a particular kind of rail; to keep the part of the street between the rails clean; to remove snow from tracks; to water tracks so as to lay the dust; regulating street railway transfers; compelling street railway companies to report at stated times; to require cars to be run at specified times; prohibiting double tracks in crowded streets; regulation of rates of fare; character of motive power used; repair of streets; limitation of number of passengers on each car; screens for protection of motormen during Winter months; requiring full stop before crossing another track; requiring a license fee for each car; regulation of smoking on street cars; spitting on floor of cars; regulating the use of overhead or underground wires; requiring proper insulation and protection of wires.



### Purchaser of Ferry Property Need Not Operate It

New York, N. Y.—The property of the Brooklyn Ferry Company was purchased at a receiver's sale by the New York Terminal Company. As the operation of the ferries was a losing proposition, the purchaser gave public notice of its intention to stop. A temporary injunction was secured but the court has refused to make it permanent. The point of the decision is that the franchise did not belong to the ferry company, but to the city. Therefore, it is for the city to run the ferry, not the purchaser at the receiver's sale.

### Would Have City Build and Own Subway

Seattle, Wash.—Superintendent of Public Utilities A. V. Bouillon is opposed to the granting of a franchise to build and operate a rapid transit subway—at least under the terms of a bill which is under consideration. If a franchise be granted at all it should require the bidders for the franchise to prove their ability financially and otherwise to carry out their agreement. A better plan, the Superintendent thinks, is a municipally owned subway to be leased to an operating company.

### Will Hold Hearing on Abolition of Trailers

Washington, D. C.—Contemplating the issue of an order compelling all the electric lines in the District of Columbia, except the interurban roads, to abolish the use of trailers after January 1, 1910, the District Electric Railway Commission has decided to grant a hearing to give the railways to be affected by the order an opportunity to show cause why they should not comply. The objection to trailers is the frequency of accidents to conductors and passengers in passing from the motor car to the trailer.

### Twenty-two Cities Accept Playground Act

Boston, Mass.—A tabulation of the cities that have voted on the playground referendum regarding the acceptance of chapter 513 of the acts of 1908, shows that only one city in the State that has taken action has rejected the opportunity to officially endorse the movement for suitable municipal means for rational physical education and recreation of its junior citizens. That city is Northampton, which voted "no" by 95 votes. Of the 21 cities that voted December 8, 17 took action on the playground question and every one adopted it, some by surprising majorities. The summary of all the cities that have voted to date follows:

New Bedford—Yes, 7,105; no, 1,187.  
Pittsfield—Yes, 3,783; no, 727.  
Marlboro—Yes, 2,064; no, 463.  
Northampton—No, 1,235; yes, 1,140 (rejected).  
Quincy—Yes, 3,721; no, 1,762.  
Fitchburg—Yes, 3,539; no, 761.  
Fall River—Yes, 10,940; no, 1,484.  
Lawrence—Yes, 7,533; no, 1,406.  
Chicopee—Yes, 1,445; no, 754.  
Brockton—Yes, 7,468; no, 1,046.  
Lowell—Yes, 10,283; no, 2,424.  
Everett—Yes, 2,102; no, 248.  
Taunton—Yes, 4,181; no, 910.  
Springfield—Yes, 10,342; no, 1,006.  
Woburn—Yes, 1,994; no, 437.  
Holyoke—Yes, 5,087; no, 787.  
Beverly—Yes, 2,139; no, 703.  
Salem—Yes, 5,129; no, 606.  
Lynn—Yes, 11,122; no, 1,083.  
Haverhill—Yes, 4,825; no, 1,116.  
Melrose—Yes, 1,386; no, 452.  
Worcester—Yes, 14,570; no, 4,849.  
Gloucester also voted for the act.

The State of Massachusetts by this general action of its voters has given the playground movement the most emphatic endorsement ever given it in any form in America. As the movement started in this State, such endorsement is very gratifying to the friends of the work.

### Wissahickon Bridge Dedication

Philadelphia, Pa.—The Walnut Lane bridge over Wissahickon Creek, the longest span concrete bridge in the world, was dedicated December 16. John F. L. Morris was chairman of the dedication committee. Mayor Reyburn and many other city officials were present. A luncheon was given at the Indian Rock Hotel, on the Park Drive, immediately after the conclusion of the ceremonies.

## MISCELLANEOUS

### City Sealers Stirred by New Palmer Order

Boston, Mass.—Daniel C. Palmer, Commissioner of Weights and Measures at the State House, is stirring up the local sealers in different towns by sending to each of them a letter requesting an annual report. Hitherto it has not been the custom of these local officers to make such a report other than to their respective local governments, and in many instances to make no report to anybody, as the sealer has not been any too active and has had very little to report. All that is going to be changed in the future. Commissioner Palmer is sending out a blank form with numerous questions upon it, all of which have got to be answered. They call for a complete summary of the work performed by the local sealer between November 15, 1907, and November 15, 1908. The local official is told that if he is unable to give all of the information asked for, he must so state in his reply and give his reasons for not so doing. Furthermore, he must keep in detail records of all work performed by him. The State Commission expects to make a compilation of the data obtained from these various local reports and to incorporate it in his own annual report to the incoming Legislature, which must be made by January 15.

### Anthracite Dangers

Scranton, Pa.—The Mayors of four principal cities and burgesses of seven boroughs in the anthracite region, after a conference at Scranton, signed a memorial to the Governor, reciting the dangers of mine caves and suggesting that the Governor, in his next annual message to the Legislature, recommend that a commission be appointed to investigate conditions and to report back to the Legislature the result of its findings, upon which adequate protective laws may be based.

### Good Effects of Prohibition in Worcester

Worcester, Mass.—The following figures, showing conditions in Worcester under license and no-license laws, were given out by Secretary Murphy of the No-license Committee during the campaign, and the city on December 8 again voted for no license.

	Police Records		Per cent. Greater Under License.
	1907.	1908.	
Total arrests .....	9,875	6,409	54
Drunks .....	2,187	842	158
Assault .....	237	174	36
Disturbing the peace.....	123	72	70
Neglect and non-support.....	48	39	23
Larceny .....	160	147	8 4-5
Insanity .....	25	20	25
Murder .....	4	0	

In making the above list those crimes have been selected that are the more direct result of the open saloon.

### Summer Street Jail

Commitments for drunkenness, 1907.....	327
Commitments for drunkenness, 1908.....	178
Per cent. greater under license.....	74 4-5

In commitments from the Central District Court the towns of Leicester, Auburn, Boylston and Holden are included with Worcester.

### City Hospital

Alcoholic ward, 1907 .....	169
Alcoholic ward, 1908 .....	69
Per cent. greater under license .....	145

### Tax Rate

1907 .....	\$16
1908 .....	17

Ninety-four cents of this increase is accounted for by increase in State tax and the overlay (tax beyond the budget), leaving only six cents for actual increase in tax for municipal expenses.

Tax rate for municipal purposes, 1907.....	\$14.29
Tax rate for municipal purposes, 1908.....	14.35
Difference—6 cents increase.	



## LEGAL NEWS

## Summary and Notes of Recent Decisions—Rulings of Municipal Interest

## LEGALIZING ILLEGAL CONTRACT

**Wharton et al. vs. City of Greensboro.**—There is no constitutional limitation upon the indebtedness of municipal corporations; the only limitation being Revisal, 1905, which the General Assembly may repeal in toto, or from the provisions of which it may except any particular municipality. Where a municipal corporation has made a contract not within its statutory powers, but within the powers which the Legislature might have legally conferred upon it, the Legislature may subsequently legalize the contract; and where an issue of city bonds was invalid because increasing the city debt to more than 10 per cent. of the assessed value of property in the city, in violation of Revisal, 1905, the Legislature had power to legalize the issue by a subsequent act irrespective of the limitation.—Supreme Court of North Carolina.

## ANNEXATION OF TERRITORY

**Lutterloh et al. vs. City of Fayetteville.**—The enlargement of municipal boundaries by annexing new territory and the consequent extension of the corporate jurisdiction, including that of taxation, is within the legislative power, and, in the absence of constitutional restrictions, the extent of such enactments, both as to the terms of the annexation and the manner in which it is made, rests in the legislative discretion and cannot be controlled by the courts. The compulsory annexation of territory to municipalities, so as to subject the property in the annexed territory to taxation, involves no contract between the State and the citizens of the annexed territory.—Supreme Court of North Carolina.

## CONVENTION HALL—PUBLIC UTILITY

**State ex rel. Manhattan Construction Company et al. vs. Barnes, Mayor, et al.**—A convention hall, to be owned, controlled, and used exclusively by a city, to accommodate public gatherings of the people of the city, and for such other public uses as may be designated by the Mayor and City Council, is a "public utility," within the meaning of the term as used in section 27 of the Constitution.—Supreme Court of Oklahoma.

## GAS FRANCHISE—EXCLUSIVENESS

**Town of Sapulpa et al. vs. Sapulpa Oil and Gas Company et al.**—An ordinance passed by a Town Council of an incorporated town in what was Indian Territory, granting to a corporation therein named, its successors and assigns, a franchise to furnish said town with light and heat by means of natural gas, and the right to use the streets, alleys and public places of said town in which to lay pipes, mains and other appliances and appurtenances through which to convey said gas for that purpose, is a contract, and, as such, is governed by the same rules of construction as any other contract between individuals or private corporations, except that it should be construed strictly against the grantee and liberally in favor of the people or the grantor. A city granting such a franchise may grant a similar franchise to some other person, firm or corporation, unless the former franchise was made exclusive in express and unequivocal terms.—Supreme Court of Oklahoma.

## DRAWBRIDGE—INJURY TO PEDESTRIAN

**Nicholls vs. City of New York.**—Though a municipal corporation must guard travelers upon its highways against such dangers as can be foreseen, or ought to be with ordinary care, it is not liable for injury from extraordinary accidents, which ordinary care would not guard against; and hence the city is not liable for injury to a child whose head was caught between the railing of a drawbridge and the railing of the stationary part of the bridge, while she was watching a passing vessel, by the drawbridge being moved a few inches to its proper place just as the draw was being closed and after a gate in the pathway had been opened to allow passage onto the drawbridge.—Supreme Court of New York.

## DISCONNECTING LAND TERRITORY FROM CITY

**Bisenius vs. City of Randolph.**—It is no defense in a proceeding under Cobby's Statutes, 1907, by a land owner to have certain territory disconnected from a city, that defendant is indebted on its bonds or otherwise.—Supreme Court of Nebraska.

## HAVERHILL CHARTER

**Graham et al. vs. Roberts.**—The Statutes of 1908, amending the charter of Haverhill, gives to all of the voters of the city absolutely equal rights to elect others to offices and to be elected themselves, in accordance with the system of municipal government established there for all alike, and is not in conflict with Declaration of Rights, providing that all the inhabitants of the commonwealth have an equal right to elect officers and to be elected for public employments. The Statutes of 1908, amending the charter of the city of Haverhill and providing for a preliminary election for nominations to determine what names shall appear on the official ballot of the final election, prohibiting the use on the official ballot of the names of candidates named by nomination papers or by a caucus, prohibiting the use of a statement of a candidate's party, requiring that only persons of good moral character and qualified to perform the duties of the office shall be accepted as candidates whose names are to go on the official ballot, and providing that 25 voters shall request that a candidate's name be put on the ballot before it shall be placed there, and that only the names of two candidates chosen at the preliminary election shall appear on the final official ballot, etc., is a valid regulation of the election of officers of the city, and is not in conflict with Declaration of Rights, providing that all elections ought to be free, and that the inhabitants of the commonwealth have an equal right to elect officers and to be elected for public employments. The provision in the Statutes of 1908, amending the charter of the city of Haverhill, which requires officers to accept office of uncertain tenure, with liability to be recalled at any time without just cause, etc., is not unconstitutional. The provision in the Statutes of 1908, amending the charter of the city of Haverhill, which provides for the initiative and referendum as to the adoption of ordinances, is not unconstitutional; for the Constitution, forbidding the initiative and referendum in general legislation, does not extend to the making of ordinances by cities, under the authority of the Legislature as to subjects of local concern, and whether such legislation shall be inaugurated by the people or by a representative body or board of officers is for the Legislature to determine.—Supreme Judicial Court of Massachusetts.

## SIDEWALK USED FOR STREET

**Webster vs. City of Vanceburg.**—That the only practicable way for wagons to reach a railroad depot was by using the sidewalk did not render the city liable for injuries to a driver caused by the sidewalk being unfit for such use, as the city was not legally bound to provide a roadway for such purpose.—Court of Appeals of Kentucky.

## SEWER ASSESSMENT—POLICE POWER

**Chicago, Milwaukee & St. Paul Railway Company vs. City of Janesville et al.**—Under the Laws of 1903, making railroad property assessable for local improvements to the same extent as individual property, lands on which a railway company's freight depot and spur tracks are situated are assessable, though part of the entirety of the company's property. General city charter law, providing for the assessment of a fixed proportion of the cost of a public sanitary sewer against adjoining lots by the front foot rule, is valid, under the rule that assessments against adjoining property are not limited to benefits received when properly made under the police power.—Supreme Court of Wisconsin.

## SIDEWALK—DIFFERENCE IN LEVEL

**Kawiecka vs. City of Superior.**—Insufficiency or want of repairs in a highway is always a question for the jury unless circumstances are such as to leave no room for reasonable doubt or disagreement as to the existence of the defect, when the question is for the court. A city is not bound to keep its streets or sidewalks in a condition of absolute safety at all times, but only to keep them reasonably safe. The city rebuilt a portion of a sidewalk by nailing planks to the upper side of the walk, and permitting other parts of the walk to remain unchanged, so that there was an abrupt difference in level of two inches at the ends of the plank nailed on the walk, over which plaintiff tripped and fell, and was injured. Held, that the defect was too slight to justify a recovery under the Statutes of 1908, giving a right of action for injuries resulting from defects in streets.—Supreme Court of Wisconsin.

## ORDINANCE NOT AVAILABLE UNLESS PLEADED

**Robinson et al. vs. Denver City Tramway Co.**—A municipal ordinance is not a public statute, but a mere municipal regulation, and to make it available in establishing a charge of negligence it must be pleaded, like any other fact of which judicial notice will not be taken.—Circuit Court of Appeals of the United States.

## NEWS OF THE SOCIETIES

**Ohio State Fire Prevention Association.**—The association proposes to develop the body into a national assembly, and a committee including H. W. Clayton, Troy; William B. Goodwin, Columbus; L. Bonar, Mansfield; J. E. Smith, Chardon; H. S. Reynolds, Cleveland, and W. H. Clemons, Cincinnati, has been appointed to arrange the details. The report on the subject says that a national assembly to further the work of organizations interested in the preserving of life and property from fire should include all the forces for the purposes of educating the public, and bringing about more substantial building laws, with all their interests centered upon the one object of reducing the loss of life and property. "Such an organization," it is further stated, "should invite in its membership not only the state fire prevention associations, but include officers, general agents and managers of insurance companies, officers of rating bureaus, state insurance commissioners, state fire marshals, architects, builders, chiefs of fire departments, superintendents of fire patrols and salvage corps, mechanical, electrical and chemical engineers, local board organizations represented by delegates and any other individuals or persons deputized as delegates, and any organized body or office interested in the preserving of life and property from fire in reducing the great fire waste of this country."

**New Jersey State Sanitary Association.**—The thirty-third annual meeting was held at Lakewood, N. J., December 5. Among the addresses delivered were the following: "The Pollution of the Delaware River; Its Cause and Remedy," by Dr. Harry M. Herbert, of Bound Brook; "The Modern Treatment of Sewage," by Emil Knichling, C.E., of Brooklyn; "The Prevention of Dust on Highways," by Engineer James Owen, of Montclair. President Duncklee in his address took for his theme, "The Reclamation of Lands Subject to Tidal Overflow." E. D. Hardy, member American Society of Civil Engineers, Superintendent of the Washington (D. C.) aqueduct and filtration plant, spoke on that subject, illustrating his address with slides. The program closed with an address by Rev. H. M. Gesner, of Atlantic City, on "The Sanitation of a Clean Mind and a Happy Disposition." Prof. John B. Smith, the State Entomologist, at New Brunswick, read a paper on "The Progress of the Mosquito Extermination Work." The election of officers for next year resulted as follows: President, Dr. William G. Schauffler, Lakewood; First Vice-President, Rudolph Hering, Montclair; Second Vice-President, Dr. Edward Guion, Atlantic City; Third Vice-President, John B. Smith, New Brunswick; Secretary, Dr. James A. Exton, Arlington; Treasurer, George P. Olcott, East Orange; Chairman Executive Council, Morris R. Sherer, Newark.

**American Society of Mechanical Engineers.**—At the annual convention, New York, December 4, Jesse M. Smith, New York, was elected President. The vice-presidents elected include George M. Bond, Hartford, Conn. The managers include A. L. Riker, Bridgeport, Conn.; H. L. Gantt, Pawtucket, R. I.; I. E. Moulthrop, Boston. William H. Wiley, New York, was elected treasurer, and C. W. Rice, New York, secretary.

**Engineers' Club of Baltimore.**—A paper on "Topographical Surveys" was presented at a meeting, December 5, by Major Joseph W. Shirley, Chief Engineer of the Topographical Survey Commission of Baltimore.

**Pacific Northwest Society of Engineers.**—The Society held its regular monthly meeting December 5 at the Chamber of Commerce, Seattle. A paper by J. D. Blackwell on "The Engineering Problems Affecting the Manufacturing Interests of Seattle" was read by Secretary A. H. Dimmock in the absence of Mr. Blackwell. After the paper there was a general discussion. Mr. Farnham, of the Denny-Renton Coal & Clay Company, thought the widening of the Duwamish River a necessity. A. F. McEwan said most of the shipping men were not in favor of the Lake Washington Canal. Robert Westerman said manufactories must be located on level land and looked to the southern part of the city for developments in the manufacturing line. A. D. Coe wanted a committee appointed to look into street car accidents. He also said that Lakes Union and Washington ought to be preserved in their natural state and not be contaminated by manufactories. His ideas regarding the street car line were not adopted, President J. C. Jeffery stating that such a matter was outside the province of the society. The annual meeting will be on the first Saturday of January, when arrangements for the annual banquet will be made known.

**Brooklyn Engineers' Club.**—The twelfth annual dinner was given in the Germania Club Building, 910 Munn Street, December 10. Richard C. MacLaurin, Professor of Mathematical Physics in Columbia University, recently elected President of the Massachusetts Institute of Technology, discussed the importance of the engineering profession in relation to present day problems. Addresses were also delivered by William T. Sedgwick, Andrew McLean, George W. Tillson and James C. Meem. The dinner was one of the largest attended in the history of the Brooklyn Engineers' Club. It was also one of the most interesting for the members of the organization, for it was the last that the members will hold in a house not their own. When the thirteenth annual banquet is held next year it will take place, according to an announcement made by George C. Whipple, the retiring President, in a new club house that will soon be erected. The following officers were elected: James C. Meem, President; Wilfred H. Roberts, Vice-President; Joseph Strachan, Secretary; William T. Donnelly, treasurer, and James W. Nelson and Charles M. Spofford, Directors.

**National Paving Brick Manufacturers' Association.**—Thirty members of the association attended the quarterly meeting at The Hollenden, Cleveland, Ohio, December 10. W. S. Purington, president of the association and head of the Purington Paving Brick Co., of Galesburg, Ill., presided. Will P. Blair, of Indianapolis, is secretary of the association. The association has for its aim the bettering of methods for laying brick roads. An examination of pavements in Cleveland was made. The next meeting of the association will be in Rochester, N. Y., in February.

**Commercial Club, Indianapolis.**—At a smoker, held December 5, Dr. Hurty, Secretary of the State Board of Health, said that Indianapolis was facing the question of a shortage in the supply of pure water. Within ten years he predicted the city would be dependent on White river for its water. He urged that steps be taken immediately for the purification of the stream, and suggested that the first means would be to divert the sewage in some other direction. Mayor Bookwalter said he would have City Engineer Blaine H. Miller make surveys and prepare plans for sewage disposal.

**Association for the Prevention of Tuberculosis.**—Preliminary steps were taken for the permanent formation of the Association for the Prevention of Tuberculosis at a meeting of prominent Washingtonians interested in the work held in the rooms of the Chamber of Commerce, Washington, D. C., December 4. The list of directors chosen includes General George M. Sternberg, William H. Baldwin, Emile Berliner, Miss Mabel T. Boardman, Dr. F. Fremont Smith, Dr. D. Percy Hickling, Dr. George M. Kober, Dr. Jesse Ramsburgh, Dr. William C. Rives, Dr. Robert Reyburn, Dr. Milton J. Rosenau, Dr. E. C. Schroeder, Rabbi Louis Stern, Miss Isabel L. Strong, Rev. John Van Schaick, Jr.; George S. Wilson, Rev. D. E. Wiseman, Dr. James Dudley Morgan, Max Cohen, General William H. Forwood, Miss Emily Tuckerman, Mrs. Truman H. Newberry, Mrs. Hennen Jennings, Dr. C. W. Richardson, Dr. G. W. Cabaniss, Dr. William C. Gwynn, Dr. Richard Kingsman, Dr. D. Olin Leech, A. T. Stuart, John Sherman. Another session was also held at the headquarters of the organization at No. 923 H street northwest.

**Southeastern Road Congress.**—At the meeting at Atlanta, Ga., December 4, resolutions were adopted calling upon the counties of Georgia to issue bonds for road improvements and urging the senators and representatives in Congress from the Southeastern States to press to a successful consummation legislation committing the United States government to a definite plan of road improvement. The following addresses were delivered: "Practical Results of Good Roads; How Obtained"—Dr. Joseph Hyde Pratt, State Geologist of North Carolina. "Steel Trackways"—Professor H. H. Stone, of Emory College. "Proper Construction of Roads and Its Importance to the South"—Hon. E. J. Watson, Commissioner of Immigration for South Carolina. "Interstate Highways"—Hon. H. A. Alexander, Atlanta, Ga. "Dustless Roads"—Hon. A. S. Mann, Jacksonville, Fla.

**Municipal Engineers of the City of New York.**—The sixth annual dinner will be held on the evening of Wednesday, January 13, 1909, at 7 p. m. sharp, at the Hotel Savoy, Fifty-ninth street and Fifth avenue, Manhattan. A special effort is being made to make this event an enjoyable and social occasion, and all members are urged to attend.

**Business Men's Club and City Club of Memphis.**—Separate meetings of the clubs were addressed, December 6, by Dr. William H. Allen, of the Bureau of Municipal Research, New York, N. Y. Change not the man, but the system, was the keynote of the doctrines advocated for the improvement of municipal government by Dr. Allen. Publicity and accounting are the means of bringing about the desired end. As a result of the visit, the bureau has been engaged to make an investigation of the system of municipal accounting and city administration.

**Civic League of St. Louis.**—The League will give a dinner at Hotel Jefferson, December 17. Short addresses on some issues of the Spring campaign will be delivered by Charles Nagel, Henry T. Kent, Frank P. Crunden and John H. Gundlach. Tables will be reserved for parties of four, six or eight. H. N. Davis is president and Mayo Fessler secretary.

**Swedish Engineers' Society of Chicago.**—A society has been formed for the purpose of promoting closer relations among the Swedish engineers of the United States. Meetings will be held the first Saturday of each month. G. A. Ackerlind, 303 Wabash Avenue, Chicago, Ill., is Secretary.



## Calendar of Meetings

December 15-17.

American Institute of Architects.—Annual convention, Washington, D. C.—Glenn Brown, Secretary, The Octagon, Washington, D. C.

December 16.

American Society of Civil Engineers.—Regular semi-monthly meeting, Society House, 220 West Fifty-seventh street, New York City.—Charles Warren Hunt, Secretary.

December 17-18.

National Civil Service Reform League.—Twenty-eighth annual convention, Pittsburgh, Pa.—Elliot H. Goodwin, Secretary, New York, N. Y.

December 28-29.

American Institute of Chemical Engineers.—Annual meeting at Pittsburgh, Pa.—Secretary, John C. Olsen, Polytechnic Institute, Brooklyn, N. Y.

January 11-16.

National Association of Cement Users.—Annual convention at Cleveland, O.—Secretary, Geo. C. Wright, Harrison Bldg., Philadelphia, Pa.

January 12-15.

Michigan Engineering Society.—Annual convention, Ann Arbor, Mich.—Alba L. Holmes, Secretary, 574 Wealthy avenue, Grand Rapids, Mich.

January 13-14.

Iowa Brick and Tile Association.—Annual Convention, Mason City, Ia.—C. B. Platt, Secretary.

January 13-14.

Iowa Engineering Society.—Meeting, Waterloo, Ia.—A. H. Ford, Secretary, Iowa City, Ia.

January 14-16.

Indiana Engineering Society.—Annual convention, Indianapolis, Ind.—Charles Brossman, Secretary, Union Trust Building, Indianapolis, Ind.

January 19-21.

American Society of Heating and Ventilating Engineers.—Fifteenth annual meeting, Engineering Societies Building, 29 West Thirty-ninth street, New York, N. Y.—W. M. Mackay, Secretary, P. O. Box 1818, New York, N. Y.

January 26-28.

Ohio Engineering Society.—Annual convention, Columbus, O.—Paul Hansen, Secretary, Harrison Building, Columbus, O.

January 27-29.

Illinois Society of Engineers and Surveyors.—Annual meeting, Chicago, Ill.—E. E. R. Tratman, Secretary, 1636 Monadnock Block, Chicago, Ill.

January 28.

Canadian Society of Civil Engineers.—Annual meeting, Toronto, Ont.—C. H. McLeod, Secretary, 413 Dorchester street, W., Montreal, P. Q.

February 1-6.

National Brick Manufacturers' Association.—Twenty-third Annual Convention, Rochester, N. Y.—Theo. A. Randall, Secretary, Indianapolis, Ind.

## PERSONALS

BEATTY, WILLIAM, Toledo, O., Cornelius J. Nolan and Charles M. Nordhoff have been elected members of the new Park Board.

BENNETT, LEO E., Commissioner of Public Works of Muskogee, Okla., together with Mayor Martin and the City Engineer, are inspecting sewerage systems and water works of neighboring cities with a view to improvements in Muskogee.

BIGBIE, JOHN, Chief of Police of Cranston, R. I., for twenty-three years, died December 11, aged sixty-four years.

BONNEY, LEWIS, Bayonne, N. J., has been appointed Assistant Chief of the Fire Department by Chief Engineer Alfred Davis; he served in the old Volunteer Department and has been acting as extra engineer.

CARR, HARVEY O., Chief of Police of Grand Rapids, Mich., for fifteen years and secretary of the National Association of Police Chiefs, has resigned as a protest against the introduction of politics in the Police Department, a patrolman having been promoted by the Police Board to Sergeant against his advice.

FARLEY, JOHN J., City Clerk of Montgomery, Ala., died December 5, at Stafford Springs, Mass., where he was seeking health.

HONEYWELL, G. M., Mobile, Ala., has been elected Chief Engineer of the Water Works, succeeding S. H. Hinckley, resigned.

JOSLIN, EDWARD N., Putnam, Conn., and Edward N. Joslin, Ralph Tefft, G. Allen Hawkins, and Omer La Rue have been elected Aldermen.

KLOSTERMAN, HERMAN, Gloucester, N. J., has been elected Chief of the Fire Department.

LEIGHTON, ADAM P., Mayor of Portland, Me., has been re-elected over James C. Hamlen and Melville A. Floyd.

MACMASTER, ALBERT L., Utica, N. Y., has been elected City Clerk; he was Assistant Chief Engineer of the Fire Department at the time of his election.

MADDOX, ROBERT F., Atlanta, Ga., has been elected Mayor, defeating former Mayor James G. Woodward.

MORAN, THOMAS, Chief of the Fire Department of Caldwell, N. J., has been re-elected for the seventh term.

QUIGLEY, JOSEPH M., Rochester, N. Y., Commissioner of Charities, has been appointed Chief of Police. Other appointments made at the same time are: Commissioner of Charities, Clarence S. McBurney; Inspector of Police, Captain Michael J. Zimmerman; Police Captain, Lieutenant Henry F. McAlester; Police Lieutenant, Sergeant Frank E. Mehle; Police Sergeant, Officer John D. Trant; Overseer of Poor, Thomas E. Crouch, Jr.

RYAN, THOMAS J., Philadelphia, Pa., also Charles Seger, William C. Gross, Frank H. Caven and Thomas R. Fort, Jr., of Select Council, and J. R. C. McAllister, John P. Connelly, Peter E. Costello, George W. Zane and Alfred Gratz, of Common Council, have been appointed a Special Committee on Municipal Finance, with authority to frame legislation to improve present conditions.

RAY, L. L., Franklin, Pa., has been appointed Chief of Police.

SMITH, GUY L., Johnson City, Tenn., has been elected Mayor and installed with other officials.

SNOW, F. HERBERT, Harrisburg, Pa., Chief Engineer of the State Department of Health, has been elected President of the Engineers' Club of Central Pennsylvania.

SOMMERS, ALFONSO, Clarksdale, Miss., has been elected City Treasurer, defeating J. O. Wallis.

TWENTY Massachusetts cities held municipal elections December 8, and selected Chief Executives as follows, those with a \* having been re-elected Mayor:

Beverly—Charles H. Trowt, over Mayor S. Harvey Dow.  
Brockton—\*John S. Kent, over W. Clifford.

Chicopee—William J. Fuller, over S. E. Fletcher and Frank R. Rivers.

Everett—\*Charles Bruce, no opponent.

Fall River—\*John T. Coughlin, over Orlando Draper.

Gloucester—Henry H. Parsons, over Augustus Hubbard and W. W. French.

Haverhill—Edwin H. Moulton, over Mayor Roswell L. Wood.

Holyoke—\*Nathan P. Avery, over W. H. Bullard.

Lawrence—William P. White, over Michael F. Cronin.

Lowell—George H. Brown, over Ex-Mayor James B. Casey.

Lynn—J. E. Rich, over Mayor Thomas F. Porter.

Malden—\*George L. Richards, over H. G. Fall.

Medford—\*Clifford M. Brewer, over M. G. Curtis.

Melrose—\*Eugene H. Moore, no opponent.

Salem—\*J. F. Hurley, over Charles A. Archer.

Somerville—John M. Woods, over John F. Foster.

Springfield—\*William E. Sanderson, over James B. Carroll.

Taunton—\*Edgar L. Crossman, over John B. Tracy.

Woburn—D. W. Bond, over Hugh P. Murray.

Worcester—\*James Logan, over Thomas F. Barrett.

## PATENT CLAIMS

904,952. Combination Trolley and Telegraph Pole. James Hackett, Bellaire, Ohio. Serial No. 448,480.

A pole of the type described comprising stepped sections, the smaller of said sections being cylindrical, a T-shaped head mounted in said cylindrical section and having right angular threaded aligning end extensions for insulators, hooks carried by said cylindrical section for supporting feed lines, and an eyelet carried by said cylindrical section intermediate said hooks for holding the supporting wires of a trolley, substantially as described.

905,073. Scraper for Road-Rollers. Charles F. Henn and David Farquhar, Buffalo, N. Y., assignors to Buffalo Steam Roller Company, Buffalo, N. Y., a Corporation of New York. Serial No. 416,528.

A scraper comprising a fixedly supported shaft, a scraper blade, a support therefor journaled on said shaft, a plate spring slidably secured to the scraper blade, a collar loosely fitted on said shaft and to which said spring is secured, and means for adjustably holding said collar.

905,153. Excavating Apparatus. Morris M. Defrees, Indianapolis, Ind. Serial No. 402,023.

In an excavating apparatus, the combination with an inclined floorway having a dumping opening situated at its upper end, a chute situated under said opening, a frame for supporting said inclined floorway, and supporting wheels upon which said frame is mounted to be portable, of an excavating scoop having its under side open adapted to be closed by said floor, centering guides situated at the upper terminal portion of said floorway, each of which is situated to extend along each side of and below said dumping opening whereby said scoop is directed centrally over said dumping opening, a draft rope connected to the rear of said scoop for returning said scoop into the excavation.

905,190. Machine for Surfacing Roads, Pavements, etc. Colin M. Ingersoll, New York, N. Y. Serial No. 428,366.

Apparatus for surfacing roads and the like, comprising, in operative combination, a wheeled vehicle; an internal combustion engine; a vehicle driving mechanism, and means for connecting it with and disconnecting it from the engine and vehicle; an air compressor, and means for connecting it with and disconnecting it from the engine; a reservoir provided at its upper end with an open-ended tube; a shut-off cock for the tube, and a discharging device at the lower portion of the reservoir; a conduit connection between the compression chamber of the air compressor and the upper portion of the reservoir; and an exhaust gas conveyor mounted in heating proximity to the reservoir and connected with the exhaust gas discharge of the engine.

905,254. Meter. John D. Walsh, Lockport, N. Y., assignor to American District Steam Company, Lockport, N. Y., a Corporation of New York. Serial No. 317,030.

In a meter, a casing, a funnel disposed and supported within the casing, and a scraper-device disposed within, and reciprocably movable lengthwise of the funnel to remove therefrom sediment collecting therein.

905,367. Road-Grading Machine. John Rein, Whalan, Minn. Serial No. 418,667.

A road-grading machine, comprising a skeleton frame mounted on a traction wheel and two smaller supporting wheels, a plow mounted inside the frame, an endless conveyor mounted on the frame and operatively connected with the traction wheel for conveying the earth from the plow toward one side of the machine, the frame of said conveyor having its inner end pivotally connected with the main frame and its outer end supported by wheels rolling on a track secured to the main frame, and means for swinging the conveyor frame on its pivot.

905,458. Globe-Cleaner for Arc-Lamps. Robert H. Read, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Serial No. 340,525.

In an inclosed arc lamp, the combination with the inner globe, of one or more wipers therein extending lengthwise thereof and conforming to the profile of the globe.

905,480. Reinforcing-Bar for Concrete Structures. Avila Thomas, Detroit, Mich. Serial No. 394,981.

A reinforcement for concrete, comprising a tension member having a flat under side and a lateral flange, said flange having a diagonal slit therein, a relatively thin and flat shear member having an end portion lying in said diagonal slit and projecting at an angle therefrom and a flat body portion lying closely against the under side of said tension member.

## THE WEEK'S CONTRACT NEWS

Relating to Municipal and Public Work—Street Improvements—Paving, Road Making, Cleaning and Sprinkling—Sewerage  
Water Supply and Public Lighting—Fire Equipment and Supplies—Bridges and Street Railways—Sanitation  
Garbage and Waste Disposal—Police, Parks and Miscellaneous—Proposals and Awards

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it all. Our sources of information are believed to be reliable, but we can not guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible; also corrections of any errors discovered.

## BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
<b>STREET IMPROVEMENTS</b>				
New York	Brooklyn	Dec. 16, 11 a.m.	Repairing with asphalt and granite on concrete, grading, etc.	Bird S. Coler, Boro. President.
New Jersey	Newton	Dec. 17, noon	Grading and macadamizing 10 miles of road.	Loren C. Cole, Dir. Bd. Freeholders.
Ohio	Cleveland	Dec. 17, noon	Brick paving, curb, grading, etc., 21 streets; Medina, 2 streets.	A. R. Callow, Sec'y Bd. Pub. Serv.
Illinois	Chicago	Dec. 17, 11 a.m.	Constructing cement and plank sidewalks in sundry streets.	H. S. Dietrich, Pres. Bd. Local Imp't.
Ohio	Dayton	Dec. 18, noon	Paving alley with brick on concrete.	W. A. Budroe, Clk. Bd. Pub. Service
Ohio	Zanesville	Dec. 18, noon	Grading, curbing, paving portion, McIntire Ave.	J. T. Hahn, Clk. Bd. Pub. Service.
California	Sacramento	Dec. 18	Bldg. macadam roadway with graded berms and concrete culverts on Up. Stockton road, 24 miles long in 8-mile sections; upper course macadam strip, 16 ft. wide and 4 ft. each side oiled asphaltic oil.	Wm. B. Hamilton, Clk. Bd. Sup.
New York	No. Tonawanda	Dec. 18, 8 p.m.	Repairing Erie Ave., from Division St. to Sawyer Creek road.	E. C. Heidenfeld, Sec'y Bd. Pub. Wks
Oklahoma	Euid	Dec. 18	Brick paving, estimated to cost \$32,000.	C. H. Sexton, City Engineer.
Minnesota	Grand Rapids	Dec. 19, 10 a.m.	Constructing highway for Itasca County.	M. A. Spang, County Auditor.
Indiana	Fort Wayne	Dec. 21	Repairing with sheet asphalt portions of numerous streets.	H. W. Becker, City Clerk.
Indiana	Terre Haute	Dec. 21, 11 a.m.	Grading, graveling, etc., Roads Nos. 4 and 10.	Nathan G. Wallace, County Auditor.
Texas	Fort Worth	Dec. 21, 3 p.m.	Repairing 14,921 sq. yds. asphalt pavement, 9 streets.	Sam Davidson, Supt. of Streets.
Minnesota	St. Paul	Dec. 21, 10 a.m.	Macadam or gravel on Bald Eagle Lake Ave.	Edw. G. Krahmer, County Auditor.
Louisiana	Opelousas	Dec. 22, 4 p.m.	Bldg. 3,000 sq. ft. cement walk, 7,000 lin. ft. brick curb.	M. Halphen, Mayor.
New Jersey	Harrison	Dec. 22	Paving William St., from John to 5th St., with bitulithic.	B. P. Walsh, Town Clerk.
New York	Brooklyn	Dec. 23, 11 a.m.	Paving, repairing, etc., asphalt, asphalt block, granite, etc.	Bird S. Coler, Boro. President.
Ohio	Cleveland	Dec. 23, 11 a.m.	Improving portion of Royalton road, Royalton twp.	A. B. Lea, County Surveyor.
Pennsylvania	Pittsburg	Dec. 23, noon	Improving 2-3 mile Troy Hill Extension, No. 2 Road.	F. P. Booth, County Comptroller.
Virginia	Roanoke	Dec. 23, noon	Paving old brick on concrete; cobblestone curb; concrete gutter, 2 streets.	W. B. Bates, City Engineer.
Indiana	Anderson	Dec. 28, 10 a.m.	Bldg. gravel road 15,056 ft. along line of Hamilton Co.	Wm. T. Richards, County Auditor.
Kansas	Abilene	Jan. 1	Constructing 1 mile of concrete curb and gutter.	J. A. Graves, City Clerk.
Indiana	Griffith	Jan. 2, 7:30 p.m.	Constructing cement sidewalks; 3 contracts.	L. A. Southworth, Pres. Town Trus.
<b>WATER SUPPLY</b>				
Ohio	Findlay	Dec. 16, noon	Constructing pumping station in Biglick township.	W. T. Platt, Clk. Bd. Pub. Serv.
New York	New York	Dec. 16, 2 p.m.	Furn. corp. cocks; contract abandoned by So. Brass Works, inc. 5,065 1-2 in., 200 3-4 in., 500 1 in., 250 2 in., complete.	John H. O'Brien, Com'r W.S., G.&E.
New York	Brooklyn	Dec. 17, 3 p.m.	Furn. and laying c. i. pipe, etc., in Prospect Park.	Henry Smith, Pres. Park Board.
New Jersey	Orange	Dec. 17, 8 p.m.	Purchase and removal of pumping machinery at Milburn.	Edw. Cheetham, Chm. Water Com.
New York	New York	Dec. 17, 2 p.m.	Furn. c. i. pipe, branch pipe and specials for high-pressure serv.	John H. O'Brien, Com'r W.S., G.&E.
Kansas	Hays	Dec. 17	Bldg. \$18,000 water works, inc. concrete pump pit, oil engines con. to triplex pumps; 1 1-2 miles c. i. pipe, specials, etc.; R. B. Orr Eng. Co., K. C., Mo.	C. A. Harkness, City Clerk.
Maine	Fort McKinley	Dec. 19	Sinking deep wells at fort.	Capt. F. J. Morrow, U. S. A., P'tland.
Kansas	Augusta	Dec. 20	Constructing water works.	Burns & McDonnell, Scarritt Bldg., Kansas City, Mo., Engineers.
Oregon	Astoria	Dec. 21, noon	Bldg. 12,000 ft. 24-in. concrete and 1,300 ft. steel mains.	C. S. Wright, Chm. Water Com'n.
Dist. of Col'bia	Washington	Dec. 21, noon	Auxiliary water system and fire protection for Home for Aged.	Jay J. Morrow, Eng'r Com'r.
New York	New York	Dec. 21	Furn. and laying water mains in 6 streets; security, \$40,000.	John H. O'Brien, Com'r W.S., G.&E.
Rhode Island	Newport	Dec. 22, 10 a.m.	Drinking water system, etc., for naval training station.	Commanding Officer, Naval Tr. St'n.
New York	Buffalo	Dec. 23	Furn. mat. and erecting steam main, etc. North Boiler House.	F. G. Ward, Com'r Pub. Wks.
Cuba	Camaguey	Dec. 28	Furn. and install pump. plant for w. w., inc. triple expan. high-duty engine, vertical type, pump 2,200 gals. per min. against pressure of 355 ft.; two water tube boilers; economizer.	Sr. D. Lombillo Clark, Dir.-Gen. of Public Works, Arsenal, Havana.
Florida	Daytona	Jan. 1	Constructing water works for city.	D. D. & C. M. Rogers, Engineers.
Florida	Palmetto	Jan. 1	Erecting w. w. tower, laying mains, etc.; \$15,000 voted.	E. F. Wilson, Mayor.
Wisconsin	Richland Center	Jan. 1	Improvements to water works, to cost \$7,000.	W. G. Kirchoffer, Madison, Engr.
Kansas	Wichita	Jan. 4	Constructing water works system.	R. N. Dorr, City Clerk.
Ohio	Minerva	Jan. 4	Water tank and tower of 100,000 U. S. gals. capacity.	L. E. Weber, Sec'y Bd. Pub. Affairs.
Indiana	Connerville	Jan. 12, 7:30 p.m.	Constructing and leasing to city, additions and improvements to water works for 10 or 25 years; bond \$100,000.	Jacob S. Clouds, City Clerk.
Arkansas	Osceola	Feb. 1	Constructing \$25,000 water works.	S. L. Gladish, Mayor.
Manitoba	Winnipeg	Feb. 22, 11 a.m.	Furn. and erect. turbine pump with elec. motor for w. w.	H. N. Ruttan, City Engineer.
<b>SEWERAGE</b>				
Maryland	Baltimore	Dec. 16, 11 a.m.	Furn. and placing 165,000 cu. yds. broken stone at sewage disposal works; also storm water drain, inc. 3,441 ft. 15 to 114-in., 2,715 cu. yds. concrete, 4,000 cu. yds. embankment, etc.	J. Barry Mahool, Pres. Bd. Awards.
New York	Brooklyn	Dec. 16, 11 a.m.	Constructing sewers and sewer basins in various streets.	Bird S. Coler, Boro. President.
Michigan	Grand Rapids	Dec. 17	Furn. 5 ft. circ. and two 4 ft. rect. sluice gates with operating stands, also sewage pumping station, Canal St.	S. A. Freshney, Sec'y Bd. Pub. Wks
Kentucky	Louisville	Dec. 18, noon	Bldg. Beargrass Interceptor, Sec. D, Contract 16.	J. B. F. Breed, Ch. Engr. Sew. Com
Ohio	Columbus	Dec. 18, noon	Building sewers in 1 street and 9 alleys.	E. W. Hirsch, Sec'y Bd. Pub. Serv.
New Jersey	Perth Amboy	Dec. 21, 8:30 p.m.	Extending Brighton Ave. sewer.	Geo. M. Adair, Street Com'r.
Wisconsin	Green Bay	Dec. 21, 2 p.m.	Bldg. 416 ft. 14-in. pipe, 3 sts.; 160 ft. 48-in., Fox River.	Fred. F. Martin, Chm. Com.onSewers.
Oklahoma	Muskogee	Dec. 21	Constructing storm sewers; estimated cost, \$250,000.	R. B. Kinsey, City Engineer.
Ohio	Mt. Vernon	Dec. 22, noon	Completion sewer system and disposal plant for State Sanit.	Dr. C. O. Probst, State House, Col'bs
Ohio	Oxford	Dec. 22, noon	Bldg. sewage disposal plant, inc. sedimentation tank, filter beds, automatic distributing machinery and controlling house.	D. P. Beaton, Village Clerk.
Kentucky	Louisville	Dec. 23, noon	Constructing Barrett Ave. sewer; Contract No. 17.	Commissioners of Sewerage.
Ohio	Alliance	Dec. 23, noon	Constructing lateral sanitary sewers Nos. 102, 3, 4, and 6.	C. E. Swearingen, Clk. Bd. Pub. Wks
Texas	Galveston	Dec. 24, noon	Bldg. 4,520 ft. rein. concrete drain, etc., on Ave. M.	A. T. Dickey, City Engineer.
Oklahoma	El Reno	Dec. 25	Constructing vit. pipe lateral sewer, to cost \$1,000.	R. N. Whittlesey, City Engineer.
Indiana	Fort Wayne	Dec. 27, 7:30 p.m.	Constructing vit. clay pipe sewer in alley east of Short St.	Edw. J. Lennon, Chm. Bd. Pub. Wks
Minnesota	Pipestone	Dec. 28, 8 p.m.	Bldg. 2,737 ft. 10-in. sewer, 7 to 10 ft. deep, 7 manholes, etc.	S. W. Funk, City Recorder.
Wisconsin	Sheboygan	Dec. 29, 4 p.m.	Furn. and laying house drains, gas and water services, etc., North 8th St.	John Kummer, City Comptroller
Kentucky	Louisville	Dec. 30, noon	Constructing Hoertz and Aubin Ave. sewers, Contracts 18 and 19.	J. B. F. Breed, Ch. Engr. Sew. Com
Pennsylvania	Polk	Jan. 13, 2 p.m.	Bldg. sewers and disposal plant, State Inst. for Feeble Minded.	State Dept. of Health, Harrisburg.



## BRIDGES

Virginia.....	Martinsville.....	Dec. 17.....	Bldg. iron bridge over Smith River at Satterfield ford.....	J. R. Gregory, City Engineer.
Ohio.....	Cleveland.....	Dec. 17, noon.....	Bldg. pile and timber protection around pivot pier, Central viad.	W. J. Springborn, Pres. Bd. Pub. Ser.
Wisconsin.....	Orange.....	Dec. 18, 2 p.m.....	Rebuilding bridge at Darius Connor's place, Meenon.....	H. C. Abramson, Town Clerk, Meenon
Ohio.....	Cincinnati.....	Dec. 18, noon.....	Bldg. steel girder bridge over No. Br. Sycamore Crk., Symmes.....	Fred. Dreih, Clk. Co. Com'rs.
Arkansas.....	Batesville.....	Dec. 19.....	Bldg. steel highway viaducts and bridges for Ind. Co.....	Lund & Hill, Little Rock, Engrs.
Georgia.....	Carnesville.....	Dec. 19.....	Bldg. bridge over Middle River at Goolsby Bridge Place.....	S. K. Cannon, Commissioner.
Pennsylvania.....	Morrisville.....	Dec. 21.....	Bldg. rein. concrete bridge over Canal at Bridge St.....	County Commissioners.
New York.....	Cazenovia.....	Dec. 22, noon.....	Constructing plate girder bridge over Lake at Mill street.....	F. C. Stevens, Supt. Pub. Wks., Alb'y
New York.....	Fort Hunter.....	Dec. 22, 1 p.m.....	Bldg. 2-span steel bridge, each span 228 ft., 2 conc. abutments, etc.....	W. Barlow Dunlap, Amsterdam.
Washington.....	Sumner.....	Dec. 24, 11 a.m.....	Bldg. 180-ft. steel and iron through span, resting on cylinder piers with 200; also 20-ft. approach, etc.....	Pierce County Commissioners.
Nebraska.....	Fairbury.....	Jan. 1.....	Yearly bridge contract for Jefferson County.....	F. A. Houston, County Clerk.
Oregon.....	Newport.....	Jan. 1.....	Rebldg. Elk City bridge over Big Elk River; bidders furnish plans.....	Lincoln County Court.
New York.....	Fairport.....	Jan. 5.....	Bldg. sub and superstructure and approaches to bridge over Canal.....	F. C. Stevens, Supt. Pub. Wks., Alb'y
Utah.....	Salt Lake City.....	Jan. 8, 8 p.m.....	Bldg. steel or concrete hwy. bridge, Jordan Riv., No. Temple St.	Louis C. Kelsey, City Engineer.
Minnesota.....	Minneapolis.....	Jan. 11, 11 a.m.....	Repairs to bridge No. 1, Hennepin County.....	Hugh R. Scott, County Auditor.
Nebraska.....	Geneva.....	Jan. 12.....	Furn. mat. and bldg. all County bridges, all kinds, for year.....	County Commissioners.
Indiana.....	Rensselaer.....	Jan. 12.....	Constructing bridge over Kanku River.....	J. H. Leatherman, County Aud.
Nebraska.....	York.....	Jan. 13, noon.....	Bldg. all steel and wooden bridges in York Co. during 1909.....	W. A. Miller, County Clerk.
Arkansas.....	Paris.....	March 4.....	Constructing 6 bridges for County.....	Fred N. Cater, County Clerk.

## LIGHTING AND ELECTRICITY

Iowa.....	Muscatine.....	Dec. 17, 7:30 p.m.....	Lighting sts. with 300 blvd. mantles, gas or gaso. lights for 5 yrs.	Gustav Weis, City Recorder.
Dist. of Col. bia.....	Washington.....	Dec. 17, 2 p.m.....	Furn. cut and thread heavy pipe, fittings, valves, hangers, etc., for power room for new Nat'l Museum building.....	Bernard R. Green, Supt. Bldg.
Pennsylvania.....	Warren.....	Dec. 18, 1 p.m.....	Furn. and install. 2 nat. gas engines, generators and switchboard	S. W. Waters, Sec'y, Hosp. for Insane.
Ohio.....	Lima.....	Dec. 21.....	Furn. mat. and mach. for elec. light plant, inc. water-tube boilers, breeching and stack, steam and elec. prime movers, switchboards and instruments, steam plant aux., add. valves and fittings, arc and incan. lighting equipment, pole line equipment, stringing of wires, etc.....	L. L. Crumrine, Sec'y Bd. Pub. Serv.
Missouri.....	Jeff's'n Barracks.....	Dec. 22, 11 a.m.....	Bldg. elec. light system, inc. pole lines, wiring bldgs., fixtures, transformers, etc.; also to furn. current.....	Capt. O. W. Bell, Q.M., U. S. A.
Manitoba.....	Winnipeg.....	Dec. 28, 5 p.m.....	Bldg. general works, transmission line, steel towers; elec. transmission cables, from Point du Bois to city.....	M. Peterson, Sec'y Bd. Control.
Virginia.....	Buena Vista.....	Jan. 1.....	Constructing \$20,000 electric light plant.....	W. T. Paxton, Sec'y Rockbridge Power Co.
Connecticut.....	Hartford.....	Jan. 4, 11 a.m.....	Lighting streets for 1 or 5 years from June 1, 1909.....	Jas. P. Berry, Sec'y Bd. C. & S.
Virginia.....	Fort Monroe.....	Jan. 4, 10 a.m.....	Complete underground system and complete system of street lighting; 5 different kinds of work, separate bids; furn. and install. two 264-h.p. and one 100-h.p. boilers, two 250-h.p. comp. engines, one 250 and one 120-h.p. engines; two 150-k.w. and one 75-k.w. generators and connections; service condenser, gauge board, 2 boiler feed pumps, 3 composite inspirators, feed water heater, etc.....	Capt. Ernest R. Tilton, Q.M.
Kentucky.....	Frankfort.....	Jan. 5, noon.....	Electric light fixtures for new State Capitol.....	Edw. M. Drane, Bd. State Cap. Comr.
Texas.....	Fort Worth.....	Jan. 15.....	Furn. arc and other lights for city.....	Lee Stephens, Com'r of Lights.

## MISCELLANEOUS

New York.....	New York.....	Dec. 17, noon.....	Repairing and rebldg. pier 75, No. river, at West 35th St., Cont. 1161.....	Allen N. Spooner, Com'r of Docks
Michigan.....	Grand Rapids.....	Dec. 17.....	Two 4-ft. vert. and one 5-ft. circ. sluice gates with oper. stands	L. W. Anderson, City Engineer
Massachusetts.....	Fort Strong.....	Dec. 17, 11 a.m.....	Bldg. garbage crematory; also building.....	Capt. R. H. Wolfe, Q.M., U.S.A.
South Carolina.....	Greenwood.....	Dec. 18.....	Erecting City Hall; Cothran & Cothran, Archts.....	Kenneth Baker, Mayor.
Ohio.....	Carthage.....	Dec. 19, noon.....	Bldg. grand stand and alterations to one on Co. Fair Grounds.....	Andrew R. James, Arch., Cincinnati
Connecticut.....	Hartford.....	Dec. 21, 11 a.m.....	Furn. 2,000 ft. 2 1-2 in. heavy double-knit jacket seamless, rubber-lined hose, with 3 and 2 1-2-in. couplings.....	Board of Contract and Supply.
Texas.....	Fort Worth.....	Dec. 21, 3 p.m.....	Collection of garbage for city.....	W. D. Harris, Mayor.
Kansas.....	Salina.....	Dec. 21, 8 p.m.....	Furn. fully-equipped 60-h.p. motor, fire apparatus; also comb. chemical and hose wagon, harness, 500 ft. fire hose, etc.....	A. W. Godfrey, City Clerk.
Ohio.....	Cleveland.....	Dec. 22, 11 a.m.....	Bldg. stone and concrete retaining wall at Rockefeller Park.....	W. A. Stinchcomb, Park Com'r.
California.....	Pasadena.....	Dec. 22, 11 a.m.....	Furnishing motor-propelled chemical fire engine.....	Herman Dyer, City Clerk.
New York.....	New York.....	Dec. 23, 10:30 a.m.....	Furn. and del. 20 top buggies for Fire Dept. officers.....	Nich. J. Hayes, Fire Com'r.
Iowa.....	Des Moines.....	Dec. 28.....	Furn. 100 or more portable chemical or powder fire exting'rs.....	H. W. Whitney, Sec'y Bd. Educ'n.
New Jersey.....	Bridgeport.....	Dec. 24.....	Constructing \$100,000 county buildings.....	H. E. Reeves, Atkinson, Engr.
Louisiana.....	Alexandria.....	Dec. 28.....	Erecting \$60,000 City Hall; Geo. R. Mann, Little Rock, Ark., Architect.....	W. B. Turner, Mayor.
South Carolina.....	Bamberg.....	Dec. 30.....	Erecting \$10,000 3-story 30x100 ft. City Hall.....	C. Gadsden Sayre & Co., Anderson, Architects.
Illinois.....	Cairo.....	Dec. 31, 5 p.m.....	Removal of all garbage during 1909.....	Ernest Nordman, City Comptroller
Iowa.....	Des Moines.....	Jan. 4, 10 a.m.....	Furn. 85-ft rapid hoist aerial truck, roller bearing and rubber tires, with full equipment.....	Geo. F. Poorman, City Clerk.
Massachusetts.....	Boston.....	Jan. 5, noon.....	Erecting and operating plant for incinerating city waste.....	Guy C. Emerson.
Iowa.....	West Union.....	Jan. 6, 2 p.m.....	Furn. 6 fool-proof cells, female juvenile cell and 20 window gratings.....	W. H. Walrath, Chm. Co. Superv.
New York.....	Fort Slocum.....	Jan. 6, 10 a.m.....	Constructing garbage crematory at post.....	Constructing Quartermaster.
Oregon.....	Portland.....	Jan. 15, 10 a.m.....	Furn. 25,000 bbls. Portland cement, f.o.b. at works.....	U. S. Reclamation Service.

## STREET IMPROVEMENTS

**Huntsville, Ala.**—Council has adopted an ordinance for paving West Clinton street with vitrified brick and asphalt; concrete curbing; vitrified-brick gutters; distance, half a mile.

**Phoenix, Ariz.**—The Board of Trade and other organizations are making a municipal campaign for better sidewalks, crosswalks and gutters.

**Little Rock, Ark.**—Council has passed ordinances providing an appropriation of \$20,000 for repaving West Markham street with asphalt.

**Texarkana, Ark.**—Bonds, \$250,000, have been voted by Precinct No. 1 for road construction; \$75,000 will be expended on streets in the suburbs, and the remainder in country districts.

**Palo Alto, Cal.**—Steps are being taken towards the construction of a splendid petrolihtic road from Palo Alto to San Jose, this achievement being the first result of the special road tax levy; improvement will mean much to Palo Alto, and in order to be secure from failure in the matter it is necessary that 200 local members of the Best Roads Association give their support to it; a committee has been appointed to visit the citizens and obtain signatures; the contemplated work would include about eight miles on the Milpitas road and ten or twelve on the San Francisco road; money raised by the special levy will be

sufficient to build 20 miles of road, that being the distance outlined by the association.

**Bridgeport, Conn.**—Director of Public Works Biltz will ask Board of Apportionment for an appropriation of \$60,000 for new permanent pavements; \$30,000 of this will be used for paving Main street with wood blocks.

**Hartford, Conn.**—Street Board is considering considerable paving for 1909; Farmington avenue will be paved with asphalt and Church street with macadam; Garden and Spring streets are among others to be improved.

**Hartford, Conn.**—One of the first projects to be considered by the proposed new Street and Sewer Commissioners is a new pavement for Main street; the asphalt is beyond repair and Mayor Lee is urging the paving with wood blocks.

**Hartford, Conn.**—City Engineer Ford has been ordered to prepare estimates for paving Capitol and Farmington avenues, Sheldon and Spring streets.

**Willimantic, Conn.**—Board of Trade is urging uniform and permanent sidewalk improvement; Council has been asked to appoint five citizens as a committee to secure data.

**Jacksonville, Fla.**—Council has appropriated \$2,000 for much needed repairs to Riverside avenue; petition has been received for sidewalks on Copeland and Forest streets.

**Pensacola, Fla.**—Specifications for the permanent improvement of Palafox street, north from De Soto to Jordan, prepared by City Engineer Thornton, have been adopted by Board of Public Works; the road will be 20 feet wide, curbed by 3x9 cypress deals and to be constructed of Goulding cinders; when bids are received by the Board for the construction of the road, Council will be asked to appropriate a sum sufficient to cover the cost.

**Macon, Ga.**—City has secured data concerning brick-making plant, and is considering the erection of one, as there is much paving to be done.

**Indianapolis, Ind.**—Board of Public Works has referred the paving of Gladstone avenue from Washington to Michigan streets, to Council; property owners want it a bituminous pavement.

**Indianapolis, Ind.**—The Board of Works has ordered the improvement of Vermont street, asphalt roadway, gutters and curb; also Maryland street, with asphalt roadway, curbing and brick gutters.

**Burlington, Ia.**—City is considering the laying of one block of brick pavement, concrete foundation, on Fourth street, and two blocks on Elm street.

**Davenport, Ia.**—City Clerk Moeller has estimates for the grading, paving and curbing of the following streets: Belle avenue, \$3,892.84; Locust street, \$26,003.54; Le Claire street, \$17,434.10; Warren street, \$8,927.25; Ripley street, \$6,065.84; High

street, \$1,970.75; Ripley street, south line, \$2,951.15; Lombard street, \$5,734.80; High street, east line, \$2,298; Pleasant street, \$4,432.63; Thirteenth street, \$1,940.45; Ninth street, \$5,703.35; Rock Island street, \$2,835.65; Sylvan avenue, \$4,824; Seventh street, \$11,146.45; Ninth street to Gaines street, \$5,713.35; Mitchell street, \$22,746.26.

**Des Moines, Ia.**—The Department of Streets and Public Improvements will recommend that paving, aggregating \$100,000, be laid on streets in the downtown district of Des Moines next summer; streets that will be benefited are West Grand avenue, East Court avenue and Walnut, approaching the bridges.—Superintendent John MacVicar and Assistant City Engineer J. M. Burrows.

**Hutchinson, Kan.**—The Commercial Club is agitating the question of getting the State to build a boulevard from the reformatory to A avenue; State has the material and the labor with the inmates of the industrial school and many of the officials have signified their willingness to forward such an enterprise.

**Leavenworth, Kan.**—The Kansas Legislature will be asked to pass a bill providing for the construction of a road, by convict labor, from the State prison at Lansing, south and east to connect with the Parallel road, which is now macadamized west from Kansas City, Kan., to within four miles of the Leavenworth county line; road proposed also would connect with the Leavenworth road, now macadamized eight miles west from Kansas City, Kan.

**Topeka, Kan.**—City Clerk has received petitions for 53 blocks of pavement.

**Topeka, Kan.**—Citizens of the East Side have petitioned Council asking that the street railway be requested to make all changes and improvements before the pavement is laid in their district. Council considered the point well taken and will make the request.

**Lexington, Ky.**—Mayor Skaln is urging a \$25,000 bond issue for paving numerous streets; the Board of Public Works is considering the improvement of Ramsey and Kentucky streets.—Chairman Flenniken.

**Somerville, Ky.**—As soon as the jurisdiction over strip of old turnpike between the old and new city limits is determined, the roadway will be improved; Southeastern Improvement Club has the matter in hand; the Street Committee of the Southeastern Improvement Club is urging the improvement of Logan street, between Kentucky and Breckenridge streets.

**Hagerstown, Md.**—The Board of Street Commissioners is considering the widening of Jefferson street.

**Rockville, Md.**—Contract will soon be given for the construction of a pike from Kensington to Bradley Lane; distance, 3 m.; estimated cost, \$25,000.

**New Bedford, Mass.**—The Municipal Committee has awarded the \$15,000 highway bonds and \$15,000 municipal loan to Perry, Coffin & Burr, Boston; the latter's bid was \$101,387.

**Grand Rapids, Mich.**—Council has ordered the grading and paving of about ten streets.—J. L. Boer, City Clerk.

**St. Paul, Minn.**—The budget for 1909 includes an increase on macadam roads account, to improve Hastings avenue to city limits, \$1,000; improvement of Mount Alry street, \$1,200; improvement of Valley street, \$450; improvement of Pine Hill street, \$600; improvement of Como Boulevard, from Capitol boulevard to Western avenue, \$20,000; macadam roads maintenance, \$6,000; paving of intersections on Sixth street, St. Peter to Main street, \$3,000.

**Carthage, Mo.**—Council is discussing the paving of streets around public square and portions of streets leading to public square; F. B. Newton, City Engineer, has estimated that the work will require 690,000 large paving blocks; total cost, \$27,700.

**Kansas City, Mo.**—Council has ordered grades re-established on twenty-one streets; roadway increased on six streets; grades established on three streets.

**Kansas City, Mo.**—The Board of Works is considering the following improvements: Sidewalks on Tracy, Mercer, Forty-second, Forty-third, McCoy, Forty-fifth, Penn, Olive, Eighteenth to viaduct over Kansas City Belt railway, White, Euclid, and paving Montgall, Twelfth to Fifteenth streets.

**Butte, Mont.**—The Street and Alley Committee of the City Council are discussing plans for work to be carried through early next spring; among other things it is proposed to recommend the construction of more sidewalks, improvements in grading and the extension of Excelsior street farther south to the flats; also to support the Legislative Committee in asking for an appropriation from the Legislature with which to park the grounds of the State School of Mines; members of the Street and Alley Committee are: Aldermen Murphy, White, Nerny, Hurler, Harrington, Ambrose, Fenner and Mooney.

**Omaha, Neb.**—Council has approved the awarding by the City Treasurer of the issue of street improvement bonds in the sum of \$252,500 to Blodget, Merritt & Co., of Boston, at a premium of \$4,340.48; Thomas J. Blodget & Co., of Chicago, bid a premium of \$5,175 on the bonds.

**Camden, N. J.**—The people of pretty Collingswood, Camden's live suburb, want Haddon avenue, the main thoroughfare, made decently passable; the Collingswood Board of Trade has taken the matter in hand.

**Camden, N. J.**—Council has approved resolution calling for a special election December 22, for the purpose of deciding whether there shall be a bond issue of \$100,000 to improve the streets of the city; Pine Grove, Chambers street, Middlesex street, King street and other sections of streets are among those to be improved.

**Gloucester, N. J.**—An election will be held December 22 on \$100,000 bond issue to finish street improvements.

**Newark, N. J.**—The Board of Works has made a tentative estimate of the street paving to be done next year; twenty streets are to be covered.

**Newark, N. J.**—Chief Engineer Sherrerd is preparing estimates for paving North Fourteenth street, repaving of Beecher street, paving of Badger avenue, paving of Ridge street, paving and repaving of Hudson street, and for the grading, curbing and flagging of Johnson avenue.

**Perth Amboy, N. J.**—Council is considering appropriations for fiscal year; \$20,000 is provided for streets and sewers.

**Perth Amboy, N. J.**—The Mayor has signed the following: An ordinance to pave Smith street, from High to Water street; an ordinance to pave Kearny avenue from Market street to Lewis street; an ordinance to work Brace avenue to grade; an ordinance to pave East avenue, from Washington street to New Brunswick avenue; a resolution to refer ordinances to work to grade Penn street, Mary street, Kennedy street, Harrington street, Kamm street and Elizabeth avenue, to Commissioners of Assessment for preliminary.

**Plainfield, N. J.**—Council has ordered the laying out and opening of Kensington avenue, from Prospect to Park avenues.—J. T. MacMurray, City Clerk.

**Trenton, N. J.**—The Board of Freeholders has received a petition for the extension of the new road, which begins at the macadam road and ends at Washington's Crossing.

**Newbern, N. C.**—Citizens will vote January 5 on issue of \$50,000 bonds for street paving.

**Flatbush, L. I., N. Y.**—The Flatbush Local Board has adopted resolutions for opening West Thirty-fifth street, West Thirty-third street, West Twenty-ninth and West Twenty-eighth streets from Neptune to Surf avenue; also West Thirtieth street from Neptune avenue to the Atlantic Ocean.

**Gloversville, N. Y.**—The Board of Supervisors, Johnstown, has passed a resolution for the improvement of State road No. 618, known as the Meco-Caroga road; it will be extended northerly a distance of two miles to Canada Lake.

**Islip, L. I., N. Y.**—The Town Board has adopted plans for the elimination of the Vanderbilt and Cutting grade crossings at Oakdale; the South Country road will be continued eastward and across the railroad at an angle and somewhat hard curve, meeting the main road a little south of its junction with the Pond road.—Chief Engineer Savage.

**Schenectady, N. Y.**—The cost of the proposed widening of Lafayette street, as estimated by the Committee on Roads and Bridges of Council, will be \$177,925.

**Dayton, O.**—City Engineer Cellarius has submitted an estimate for the improvement of Wyoming street, from Hyland avenue to Phillips street, to the Servers; this is for putting in combined curbing and walks and will cost 35 cents per linear foot; cost of street intersections by the city will go to \$400.

**Hamilton, O.**—The citizens are discussing the advisability and feasibility of constructing a roadway connecting Hamilton and Coke Otto, the thriving and prosperous young suburb of the city and the adoption of means for the protection of the city from the imminent liability of the river to change its course, which is a constant and impending peril and menace; roadway or boulevard proposed was to be 6,800 feet or about a mile and a quarter in length, 100 feet wide and of a contemplated height to the level of the C. H. & D. tracks.—Dr. A. L. Smedley, Chairman.

**Poland, O.**—Bids will be received January 7, 2 p. m., for the purchase of \$20,000 road improvement bonds.—W. J. Maurice, Township Clerk.

**Toledo, O.**—Council has ordered the improvement of Georgia avenue, from Collingwood avenue to Cherry street.—J. M. Babcock, Clerk.

**Toledo, O.**—The Public Improvement Committee has directed the Solicitor to prepare legislation for the opening of Hawley street, 2,000 feet, at a cost of \$40,000, under the Lake Shore tracks.

**Youngstown, O.**—Council has passed resolutions for the paving of Bryan street and Park View avenue.

**Youngstown, O.**—Cooksville Township Road Improvement bonds, amounting to \$20,000, have been sold to the Mahoning National Bank for \$20,500.

**Ada, Okla.**—New bids will be received for paving Twelfth street with vitrified brick; width 72 feet; cement filler and Portland cement concrete base.—W. B. Jones, City Clerk.

**Ardmore, Okla.**—Citizens will vote on issue of \$300,000 bonds for street improvements and erection of school building.

**McAlester, Okla.**—The city is preparing to build several miles of sidewalk if the property owners do not get busy and soon let contracts; Commissioner Jackson has notified all of the property owners who have bad walks that they must build at once.

**Oklahoma City, Okla.**—The Oklahoma Automobile Association has pledged \$10,000 for the construction of a roadway around the city.—Mayor Scales, Park Commissioner Clark and G. P. Cory.

**Portland, Ore.**—Council has ordered the paving with brick of a portion of Fourth street.

**Altoona, Pa.**—City is considering the paving of Ninth avenue, between Seventeenth and Nineteenth streets.

**Conemaugh, Pa.**—Citizens have voted \$30,000 bond issue for street and sewer improvements.—Clerk McCartney; J. H. Grove, Burgess.

**Harrisburg, Pa.**—Camp Hill is considering the construction of a State road; it will be a new kind of road and cost more than the Telford macadam road.—Mayor Smith, Chairman Finance Board of Camp Hill.

**Hazleton, Pa.**—Citizens are discussing best material to pave North Laurel street.—Dr. E. B. Doolittle, Chairman; William Glover, Secretary.

**Philadelphia, Pa.**—Bustleton avenue between Frankford avenue and the North-east boulevard, which is in bad condition, is to receive the attention of the Mayor and the Bureau of Highways.

**Philadelphia, Pa.**—With a view to having the Parkway completed, Mayor Reyburn has expressed a new idea; he contemplates a scheme whereby property along the Parkway shall be acquired upon bonds or installment mortgages.

**Pittsburg, Pa.**—A constitutional amendment authorizing a \$50,000,000 bond issue for highway improvement is the ambitious aim of Pennsylvania motorists; as it will take five years to adopt the amendment under the statutory provisos, they will endeavor meanwhile to obtain \$5,000,000 for immediate use. Governor E. S. Stewart is lending his aid.

**Scranton, Pa.**—The ordinance introduced by Councilman Casey, providing for the widening of Sand street, from Pike street to Pearl, has passed first and second readings.

**Wilkes-Barre, Pa.**—Council has passed for second and third times the ordinance transferring the sum of \$1,482 from the "contingent" in miscellaneous appropriation to the item of "work done by City Engineer" and "general street work and repairs."

**Nashville, Tenn.**—Citizens on White avenue are urging the immediate improvement of their street; Committee on Improvements and Expenditures has appropriated \$2,000 for macadamizing of Sixteenth avenue.

**Boston, Tex.**—Bowie County has voted \$250,000 road and bridge bonds.

**Brownwood, Tex.**—Citizens have voted \$10,000 bonds for street improvements.

**Dallas, Tex.**—The Board of Municipal Commissioners has ordered the improving of Colonial avenue with fireproof Jacksboro rock macadam and combination concrete curb and guttering.—Wm. Doran, Commissioner of Streets and Public Property.

**Dallas, Tex.**—Property owners on Annex avenue have filed a petition to the Commission asking for the paving of that street between Bryan and Ross avenue with bitulithic; petition provides that the paving shall not cost more than \$2.55 per square foot and that concrete curbs and gutters shall also be put in by the property owners.

**Houston, Heights, Tex.**—Council is considering \$25,000 bond issue for drainage, street improvements and fire protection.

**Houston, Tex.**—A petition, bearing the names of about 200 residents along the street, has been presented to the City Council asking that Austin street be paved with brick.

**Charlotte Court House, Va.**—County will vote January 14 on issue of \$100,000 bonds for road improvements. Address County Commissioners.

**Norfolk, Va.**—Mayor Riddick has approved ordinance appropriating \$1,423.10 for



improving Reilly street from Virginia street to Cove street canal.

**Norfolk, Va.**—Council has received an ordinance for the opening of Falkland street so as to give a direct cut from Lovitt avenue, on the east side, to Freemason street running to the extreme western end of the city.

**Norfolk, Va.**—An agreement has been made among the owners of the property on the east side of Granby street between Freemason and Washington streets, which promises to make the former thoroughfare wider at this point than at any other along the street; holders of this property have an understanding that when the district, or any part of it, is permanently improved by the erection of new buildings or otherwise, the line is to be set back three feet.

**Norfolk, Va.**—The Board of Control has sent a communication to the Public Improvement Committee submitting estimates on the cost of paving Wide and Newton street with second quality paving blocks; City Engineer had figured out the cost at \$8,204.50.

**Norfolk, Va.**—Street Committee is considering petitions for pavements on Harrison and High streets; curbing on Effingham and Stonewall streets and granolithic pavement on Emmett street.

**Petersburg, Va.**—City is considering change of grade on River street, from the west side of River street to Fifth street, and the intersecting streets; City Engineer has estimated that excavation alone will cost \$12,000.

**Portsmouth, Va.**—Finance Committee is considering the improvement of Nelson, Loudon, North, Guthrie, Leckie, Third, Wythe and Harrison streets.

**Camas, Wash.**—Council has received a report on the proposed improvement of Fourth and Clark streets, submitted by Engineer Blackwood; he estimates that the cost of grading and graveling on Fourth will be not over \$25 per lot; on Clark street the cost will be still less.

**Olympia, Wash.**—City will pave twelve blocks.

**Puyallup, Wash.**—A bond issue will be voted on in the spring for the macadamizing of Pioneer avenue.

**Seattle, Wash.**—R. H. Thomson, City Engineer, has estimated the cost of local improvement work as follows: Crescent Drive, paving with asphalt, \$25,000; Sixth avenue, paving with vitrified brick, \$25,000; Market street, N. W., planing, \$7,800; Sixth avenue, concrete sidewalks, \$5,500; Jackson street, paving with asphalt, \$195,000.

**Seattle, Wash.**—City is considering the regrading of Sixth, Seventh and Eighth avenues, between James and Madison streets.—Claude C. Ramsey, J. Edgar Brown and Leonard A. Mason, Committee.

**Seattle, Wash.**—Council has ordered the following work: Nob Hill avenue, walks; Sixth avenue, west, walks; Market street, planing; Jackson street, paving; also appropriated \$14,500 from the general fund for the improvement of Sixteenth avenue North and others; appropriating \$13,657.62 for the improvement of Roy and West Roy streets by paving; \$2,500 for the improvement of Holgate street; and passed resolutions providing for the paving of Taylor avenue, East Queen Anne drive, Fifth avenue North and other streets in the Queen Anne Hill district, carrying with them an appropriation of \$33,000 from the general fund.

**Spokane, Wash.**—City Engineer is preparing plans for the paving, with asphalt, of Howard street between Maxwell avenue and the Spokane River, curbing to be of granite; also for the sewerage of Howard street in the same district.

**Tacoma, Wash.**—A petition has been prepared and will be presented to the Council asking that Tacoma avenue be paved from North Sixth street to Carr street, and also that the bridge over the gulch between North Sixth and Eighth streets be eliminated; to do this it will be necessary to move the street 150 feet west of this point so as to make the cost of filling less.

**Tacoma, Wash.**—Council has acted upon following resolutions: Instructing Commissioners of Public Works to make estimate for laying plank walk and gutters on Eleventh street and St. Paul avenue; paving North Twenty-eighth street and estimates for the improvement of North Twenty-sixth, North Twenty-fourth, Pine street, South Park avenue, North Seventh and North Thirteenth streets; also passed ordinances providing for grading of Twenty-sixth and Pine streets and providing for sidewalks on South Park avenue.

**Charleston, W. Va.**—City will receive bids about January 1 for constructing, approximately, 110,400 square yards of street paving and 47,580 linear feet of curbing.—W. A. Hague, City Engineer.

**Charleston, W. Va.**—A special committee, composed of Chas. Capelo, A. J. Humphreys, P. T. Board and City Engineer W. A. Hogue, has visited ten eastern cities in

order to secure data concerning paving materials; report will soon be submitted to Board of Affairs.

**Green Bay, Wis.**—The West Side Improvement Association is urging a new boulevard and the change of approaches to the new Walnut street bridge.—H. W. Knox, Jas. Tiernan and G. G. Papp, Committee.

**Racine, Wis.**—A resolution has been presented to Council directing the Board of Public Works to prepare plans and an estimate of cost for grading Twelfth street from the Northwestern tracks to West boulevard; this is the initial action in an improvement that will eventually make that one of the most beautiful thoroughfares of the city.

**Racine, Wis.**—Council has received a petition from Mead street property owners between Sixteenth and Seventeenth streets asking that the street be paved with macadam.

**Sparta, Wis.**—Street Committee received no bids for the construction of standard cement sidewalks in various streets. John T. Hutson, chairman.

**Cochrane, Ont.**—The Temiskaming & Northern Ontario Railway Commission has under consideration the expenditure of \$15,000 this winter in clearing and grading the streets of this city.

#### BIDS RECEIVED AND CONTRACTS AWARDED

**North Birmingham (P. O. Birmingham), Ala.**—City has awarded contract to C. M. Burkhalter and to Dunn & Lallande Bros., both of Birmingham, for street improvements; total expenditure, about \$25,000.

**Tuscaloosa, Ala.**—The Mayor and Aldermen, after hearing W. B. Oliver in behalf of G. C. Engsfeld, and J. L. McGehee in behalf of the Tuscaloosa Concrete Company, accepted the bid of the Tuscaloosa Concrete Company for nearly three miles of concrete sidewalks, for \$6,659.

**Pasadena, Cal.**—Contract for improving Arbor street has been awarded to Smith & Degryse, at the following prices: Grading, per linear foot, 42 cents; cement curb, per linear foot, 14-inch, 25 cents; cement curb, per linear foot, 16-inch, 27 cents; cement gutter, per square foot, 14 cents; oiling with crude mineral oil, per linear foot, 30 cents.—Heman Dyer, City Clerk.

**Cairo, Ill.**—Bid on cement walk by Hanes & Co., 13 cents and 15 cents per foot, was referred by Council.

**Elkhart, Ind.**—The Andrews Paving Company, of Hamilton, O., has secured the contract for paving S. Main street at the following bid: 19,438 square yards Trinidad sheet asphalt, 1½ inches wearing surface, 1-inch binder, including 6-inch concrete foundation and excavation, \$1.98; 9,579 linear feet 6-inch combined curb and 16-inch gutter, 44 cents; 840 linear feet curb, 44 cents; 481 linear feet gutter, 30 cents; 877 linear feet headers, 30 cents, and for drainage, 25 Elkhart catchbasins, including connecting chutes (8-inch pipe), each, \$30; 38 inlets, including connecting chutes (6-inch pipe), each, \$20, and four manholes, each, \$30; total, \$45,109. The Western Construction Company, of Lafayette, bid for this work, \$48,111.—A. M. Smith, City Engineer.

**Indianapolis, Ind.**—The lowest bid received by the Board of Public Works for asphalt roadway, curb and gutters in Vermont street from Noble street to Piques run, was by the Union Asphalt Construction Company, \$4.73.

Other low bids received were: Walks and curb in Park avenue, from Thirtieth to Thirty-second street; John Arnold, \$1.16. Walks and curb in Thirty-first street, from Central to Park; John Arnold, \$1.21. Walks and curbing in north side of Thirtieth, from Central to College avenue; Lackey Bros., \$1.20. Cement walk in Hawthorne lane, from Washington to Lowell; F. W. Abel, 61 cents. Grading and asphalt roadway in Parker avenue, from Tenth to Nowland avenue; Union Asphalt Company, \$3.37. Asphalt roadway, sidewalks and curb in Alabama street, from South to Merrill street; Marion County Construction Company, \$7.42.

**Michigan City, Ind.**—County Commissioners Miller and Baumgarten have awarded the Frank Morrison macadam road contract to Jacob Ackerman, whose bid was \$25 under that of W. B. Hutchinson, Jr., of Michigan City; the contract was let for \$9,890; Clyde Martin was selected engineer and D. J. McMurray superintendent.

**Hagerstown, Md.**—H. E. Bester has been awarded the contract to furnish crushed stone to the city and place them upon the street wherever needed at 80 cents per ton.

The County Commissioners have awarded to the Corbett Fence Company the contract to erect an iron picket fence around the grassy plat on the west side of the Court House.

**Coffeyville, Kan.**—The contracting firm of Hiatt & Johnson, which secured the contract to pave certain portions of several streets, has commenced work under the supervision of T. H. Johnson, a member of

the firm; the first work is being done on West Fifth street, between Maple and Gran streets, while other paving will be placed on portions of West Ninth street, East Ninth street, one block on West Eighth street and two blocks on First street, from Walnut west.

**Kansas City, Kan.**—The Wyandotte County Commissioners have awarded paving contracts amounting to \$14,000; two roads, the Shawnee and Southwest boulevards, are to be resurfaced, and John Mahoney secured the contracts at 33 cents a square yard. R. H. Sawyer was awarded the contract for macadamizing the De Friese road one mile north from the Turner bridge at 44½ cents a square yard. L. L. Maxon secured the contract for macadamizing the Gibbs road from the end of the present macadam to the Johnson County line, a distance of three-quarters of a mile, at 56 cents a square yard.

**Rockville, Md.**—The Commissioners of Montgomery County have awarded contract to the Highway Construction Company for the construction of about one mile of the Shoemaker Pike from Chevy Chase Circle to Otterbourne for \$8,000.

**Westernport, Md.**—Charles S. Jeffries, Frostburg, has contract to construct Westernport State aid road, 1¼ miles long.

**Kansas City, Mo.**—The first contract for paving and sidewalk work under the provisions of the new city charter were let by the Board of Public Works, in each case to the lowest bidder; the following are the improvements ordered, with the lowest bid per square yard:

Asphalt pavement: Eighth street, Hickory to 279 feet east of Santa Fe, \$2.18; Wyoming street, Twelfth to Fourteenth street, \$2.18; Scarritt avenue, Kensington to Elmwood, \$1.96.

Artificial stone sidewalk: Chelsea avenue, Twenty-fourth to Twenty-seventh street, 13.4 cents a square foot; Fremont, Twelfth to Fifteenth street, 14 2-3 cents a square foot; Kensington, Twenty-fourth to Twenty-seventh street, 13¼ cents per square foot; Mersington, Twenty-fourth street to Howard avenue, 12½ cents per square foot; Walrond avenue, Twenty-fifth to Twenty-sixth street, 14½ cents a square foot; Harrison, alley north of Eighth to Eighth street, 13 cents a square foot.

Contracts have been awarded as follows: Parker Washington Company, 5,743 square yards asphalt, 1½ inches thick on 5-inch Portland cement base, \$1.92 per square yard; J. E. Welsh, 142 square yards brick, \$1.79 per square yard; M. Meuse, 420 square yards brick, \$2.45 per square yard.—A. D. Ludlow, Assistant City Engineer.

**Salem, N. J.**—Bids were received December 9 for the construction of 3½ miles of gravel road in Upper Pittsgrove township and Elmer borough over what is known as the old Barnsboro turnpike, extending to the Gloucester County line; the contract was awarded to J. S. Fitzer & Son, of Clayton, for \$10,950.30, the lowest bid.

**Perth Amboy, N. J.**—The following bids were received and opened by Council:

East avenue: Henderson Bros., excavation, 48 cents per cubic yard; concrete, \$4.80 per cu. yd.; old curb reset, 11 cents per linear foot; new curb set in concrete, 54 cents per linear foot; Kushequa paving block, \$1.53 per square yard; Metropolitan paving block, \$1.53 per square yard; Saxton paving block, \$1.26 per square yard; Auburn paving block, \$1.29 per square yard. J. K. Jensen, excavation, 47 cents; concrete, \$4.25; old curb, 5 cents; new curb, 56 cents; Metropolitan block, \$1.52; Kushequa block, \$1.45; Saxton, \$1.36. O. K. Jorgensen, excavation, 50 cents; concrete, \$4.20; old curb, 15 cents; new curb, 65 cents; Kushequa, \$1.50; Metropolitan, \$1.54; Shawmut, \$1.39. Meagher & Smith, excavation, 51 cents; old curb, 5 cents; new curb, 56 cents; Kushequa, \$1.40; Shawmut, \$1.35; Auburn, \$1.27; Saxton, \$1.38.

Smith street: Hastings Pavement Company (awarded contract), excavation, \$1.26; concrete, \$6.20; old curb, 50 cents; new curb, 80 cents; asphalt block pavement, \$2.32 per square yard; Barber Asphalt Paving Company, excavation, \$1.25; concrete, \$6.50; old curb, 50 cents; new curb, 98 cents; asphalt block pavement, \$2.35.

**West New York, N. J.**—The recent redemption of improvement certificates resulted in many contractors offering to do the improvements on which bids were received; the different jobs and those who bid were: Paving and otherwise improving Thirteenth street from Bergenline avenue to the Palisade Railroad, Joseph Murphy, Nolan & Hornung, Henry Emmer, Thiel Contracting Company.

Construction of the Twelfth street sewer, west of Bergenline avenue, Jacob Hornung, Thiel Contracting Company and Henry and Emmer.

Sewer in Twentieth street between Bergenline and Hudson avenues, Joseph Roscitt, Jacob Hornung, Henry & Emmer, Nolan & Hornung and Thiel Contracting Company. Sewer in Sixteenth street, between Ber-

genline avenue and Van Buren place, Henry & Emmer, Joseph Roscitt, Thiel Contracting Company, Jacob Hornung and Behrman & Young.

Sewer in Madison street, north of Eighteenth street, Henry & Emmer, Thiel Contracting Company and Jacob Hornung.

Improvement of Monroe place, between Sixteenth and Seventeenth streets, Henry & Emmer, Behrman & Young, Thiel Contracting Company and Jacob Hornung.

The bids were referred to the Committee of the Whole for report; computation of the figures indicate that Joseph Murphy is low for the Thirteenth street paving; that Henry & Emmer will secure the Twentieth and Twelfth street sewers; Thiel Contracting Company the Monroe place improvement and Sixteenth street sewer, and Jacob Hornung the Madison street sewer.

**Long Island City, L. I., N. Y.**—Contracts for paving in Queens Borough have been awarded as follows: Asphalt paving on Second avenue, First ward, to Hastings Pavement Company, 25 Broad street, New York City, \$35,461; asphalt block on Temple street, Continental Asphalt Paving Company, 79 Wall street, New York City, \$18,345, and wood block on Bergen avenue, U. S. Wood Preserving Company, 29 Broadway, New York City, \$17,022.

**New York, N. Y.**—The lowest bid received by Louis F. Haffen, President Bronx Borough, for paving on 165th street and Clay avenue was submitted by the Barber Asphalt Paving Company as follows: 5,420 square yards asphalt block pavement, \$1.73; 883 cubic yards concrete, including mortar bed, \$6; 3,125 linear feet old curb reset in concrete, 35 cents; total, \$15,862. Total of other bids: Continental Asphalt Paving Company, \$15,962; Asphalt Construction Company, \$16,746, and Hastings Pavement Company, \$15,992.

The lowest bid for paving East 179th street, Bronx Borough, was submitted by the Asphalt Construction Company: 1,800 square yards asphalt block, \$1.74; 615 cubic yards concrete, including mortar bed, \$6; 500 linear feet new curb set in concrete, 98 cents; 1,600 linear feet old curb rejoined and reset in concrete, 40 cents; 1,855 square yards new granite block pavement on concrete foundation, laid with paving cement joints, to be kept in repair for one year from acceptance, \$2.99; total, \$13,426. Totals of other bids: Barber Asphalt Paving Company, \$14,149; Continental Asphalt Paving Company, \$13,674; Hastings Pavement Company, \$13,631.

The Asphalt Construction Company submitted low bid for paving with asphalt block East 139th street, between St. Anns and Cypress avenue, Bronx Boro., for \$8,567, and Jennings street, from Union avenue to Prospect avenue, \$5,343.

The following are the bids received by the Commissioners of Parks for furnishing material and reconstructing roadway of Eastern boulevard, in Pelham Bay Park, including surfacing with asphaltic mixture, from a point north of Split Rock road to northerly approach of new bridge over Eastchester Bay and from southerly approach of bridge, to southern boundary of Pelham Bay Park in Bronx Borough, City of New York: (a) 36,500 square yards, per square yard; (b) totals: Joseph A. Boyce, (a) \$1.38, (b) \$50,370; Thos. M. Hart, (a) \$1.54, (b) \$56,210; Imperial Road Company, of Westchester, (a) \$1.46, (b) \$53,290; Phoenix Construction Company, (a) \$1.59, (b) \$58,035; Sicilian Asphalt Paving Company, (a) \$1.49, (b) \$54,385; Standard Asphalt and Rubble Company, (a) \$1.42, (b) \$51,830; Uvalde Asphalt Paving Company, (a) \$2.10, (b) \$76,650; Warren Asphalt Paving Company, (a) \$1.43, (b) \$52,195.

**Troy, N. Y.**—Bids for the construction of a retaining wall on Congress street were received from William McDonough and Andrew Flynn and were referred to the City Engineer and Clerk for tabulation. The Boutwell Milling and Grain Company was awarded the contract for oats at 57 cents per bushel.

When the matter of the contract with the Hassam Company was taken up, the Clerk was notified by Mr. Wellington that an injunction had been granted against the award.

**Troy, N. Y.**—The Board of Contract and Supply has awarded the contract for paving a portion of Congress street to the Hassam Paving Company, at \$23,530.

**Cincinnati, O.**—Clifford Robinson, of Hamilton, O., has been awarded the contract by the Board of County Commissioners for repaving Springfield pike in Springfield Township.

**Hamilton, O.**—The Board of Public Service is stated to have opened bids as follows for resurfacing and repairing Main street with asphalt: Barber Asphalt Paving Company, of Cincinnati, \$19,600, and Andrews Asphalt Paving Company, \$18,840 (awarded contract).

**Chickasha, Okla.**—G. A. Heman, who was awarded the contract for putting in the eight miles of paving, has arrived in the

city and is gathering his force of laborers preparatory to beginning the work; the contract calls for the work to be completed within 165 working days; Council has awarded Mr. Heman the contract for bringing the streets of the city to grade; this includes all the streets of the city that will not be paved.

**Muskogee, Okla.**—Contract for 14,000 square yards of asphalt paving has been awarded to the Parker-Washington Company, of Muskogee, for \$28,100, of sheet asphalt contracts aggregating \$300,000; the Parker-Washington Company secured contract for about one-half of the work at \$1.79 per square yard for Bermudez asphalt, and P. I. McNeerney got the major part of the other half at \$1.89 for Texico; the Cleveland Trinidad Paving Company was awarded two small contracts at \$2.03 for Trinidad, and the Heman Construction Company received contract for one street of 25,000 square yards at \$1.89 for Trinidad asphalt.—L. B. Kinsey, City Engineer.

**Portland, Ore.**—The Hassam Paving Company has secured the contract to pave about two miles of streets in the Holladay Addition, including East Seventh, East Eighth, East Ninth streets, etc.

The Executive Board has awarded the contract for paving Cleveland avenue to the Barber Asphalt Company for \$11,173.67; the Investment Company has had an injunction issued against letting the contract.

The Denny-Renton Clay Company, of Seattle, also secured favorable action by the Council for vitrified brick pavement on Fourth street.

**Philadelphia, Pa.**—Councils have passed an ordinance authorizing a supplementary contract to be entered into with Edwin H. Vane toward completing the Southern boulevard, at a cost of \$400,000.

**Steelton, Pa.**—Bids for repairing curbing on Front street were sent in; Mr. Sharp, who had charge of the curbing laid when the street was paved, stated that the responsibility for the poor grade of curbing furnished rested with Mason D. Pratt, the engineer in charge; Sharp wanted crushed stone, but Pratt decided that limestone siftings should be used and that caused the curbing to be of poor quality. The bids were as follows: Mr. Sharp, 59 cents per linear foot; M. Polti, \$40 for the job; Shoemaker, of Harrisburg, 80 cents per foot.

**Chattanooga, Tenn.**—The Board of Public Works is stated to have awarded the contract for paving a portion of Eleventh street with chert to E. P. Norris at \$22.408.

E. P. Norris, Duncan avenue and Spruce street, submitted the low bid to the Board of Public Works, at about \$23,000, for the construction of about 4,100 feet of chert roadway etc., on East Eleventh street.—H. F. Van Dusen, Chairman of Board.

**Dallas, Tex.**—The Board of Commissioners has adopted the recommendation of Mr. Doran that the bid of the Texas Bitulithic Company for the improvement of Jackson street, between Harwood street and the Santa Fe Railway, be accepted; according to this bid the street is to be paved with vitrified brick blocks on a 5-inch gravel concrete foundation; there is also to be an asphalt filler between the bricks, which, it is said, will avoid grounds for complaint about the slippery surface; the cost of the paving is \$2.23 per square yard, there being no maintenance clause, as the brick will be guaranteed for five years and must come up to the city's test; upon suggestion of Mr. Doran, the city has already ordered that the uniform driveway of this street be fixed at 30 feet; work is to begin in 60 days.

**Houston, Tex.**—John C. Underwood, of Houston, has been awarded the contract for paving San Jacinto, Preston and Dowling streets by Council; his bid was 45 cents for excavation, 1 cent for overhaul and 82 cents for surfacing.

**Salt Lake City, Utah.**—Following are the details of the low bid of Davis & Heuser, city, who were awarded contract for sidewalk extension No. 141 at \$5,033.94: Excavating 4,757.6 cubic yards at 25 cents; laying 13,737.64 square feet cement sidewalk, 4 inches thick, at 10 cents, and 606 square feet, 6 inches thick, at 12 cents.—L. C. Kelsey, City Engineer.

**Aberdeen, Wash.**—Andrew Peterson has been awarded a contract for laying 13,000 yards of asphalt pavement on Wishkah street and doing other work for \$34,371.50. Other bids received were: Andrew Peterson (brick), \$38,999; F. A. Keasal (brick), \$35,696.80; Pacific Contract Co. (brick), \$35,731.50; Lister Construction Co. (brick), \$38,081.50; Lister Construction Co. (wood), \$37,464. Andrew Peterson was also awarded a contract for laying 6,170 yards of asphalt pavement on H street and doing other work for \$68,330. Other bids received were: F. A. Keasal (brick), \$74,374.75; Lister Construction Co. (brick), \$76,170.10; Lister Construction Co. (wood), \$74,870.10; Pacific Contract Co. (brick), \$72,334.10. Details of Andrew Peterson's bid for Wishkah street

were: For 2-inch asphalt surface and 1-inch binder on 6-inch concrete, \$2.45; excavation, 62c.; 240 linear feet circular granite curbing, \$2.10; 4,350 linear feet of 6-foot by 12-inch armored concrete curbing, 70c.; 7,460 square yards of cement sidewalk, half-inch surface, 3½ base, \$1.15; 4 catch basins, \$65; 4 extra inlets, \$20; 1,300 linear feet 18-inch pipe storm sewer, 7 feet deep, \$1.80; sewer box, \$15; 50 linear foot box outlets for sewers, \$1; wood stop, per linear foot, 40c.; cleaning, grubbing and removing unsuitable material, lump sum, \$3,500. For H street Andrew Peterson bid the same prices, except for cleaning and grubbing, lump sum \$6,000.

**Bremerton, Wash.**—Contract has been awarded to Charles A. Worth for laying a cement sidewalk on the east side of Pacific avenue, from Burwell avenue to Mill street; the Engineer's estimate on this work is \$4,200; his bid for the concrete work was \$1.16 per square yard.

**Seattle, Wash.**—Bates & Clark were awarded a contract to construct the proposed pebble mill for use in conjunction with the proposed municipal asphalt plant.

**Tacoma, Wash.**—Three contracts, the most important of which is the paving of the North End streets included in District No. 410, were awarded by Commissioner of Public Works H. J. McGregor. The contract for District No. 410 was awarded to the Barber Asphalt Paving Company at \$103,270, or nearly \$1,000 below the City Engineer's estimate of \$114,000. The Independent Asphalt Company was a close second, making a bid of \$103,799, while the Coast Contracting Company bid \$108,000 and the Lister Construction Company \$109,000. The district includes parts of Junett, North Twenty-ninth, Proctor, Mason, Bridge and Stevens streets.

The contracts for laying sidewalks on North Twenty-ninth, North Thirtieth, North Thirty-first and North Twenty-eighth streets was awarded to J. L. Caldwell, whose bid was \$1,199. The only other bidder was Erickson & Co., who proposed to do the work for \$1,365.

The contract for grading North Thirtieth street in District No. 605 was awarded to Sheldon & Gill on a bid of \$4,660. Barney & Berry offered to do the work for \$4,845 and the Lister Construction Company submitted a proposal at \$4,894. The estimate was \$5,169.

Commissioner of Public Works H. J. McGregor has awarded four contracts out of six for which bids were opened; two were held up because only one bid was received on each; it has been the policy of Commissioner McGregor not to award a contract when only one bid is received, as he believes that the interests of the taxpayers are better protected when there is competition; the propositions on which the contracts are being held up are for grading in districts Nos. 385 and 362. In district 385 the Lister Construction Company offered to do the work for \$20,340. The work in this district consists of grading and sidewalk building on Proctor street, from Sixth avenue to North Twenty-seventh street. P. J. Concannon was the only bidder for the work in district No. 362, which consists of grading South Fifty-fourth street, from Asotin to Railroad avenue. His bid was \$5,900.

The following contracts were awarded: District No. 668, building sidewalks on South Fifty-sixth street, from Pine to Proctor street, to J. J. Tveter, \$3,490. There were six other bidders.

District No. 643, grading and constructing sidewalks on South Fourteenth street, from Prince to Cedar street, awarded to the Puget Sound Cement Stone Block Company for \$1,715.12. There were three bids received on this work.

District No. 657, grading Columbia avenue, from Pacific avenue to Park avenue, awarded to J. J. Taylor and G. H. McQueen for \$3,955.30. Three bids were received.

District No. 107, paving North Prospect, from Sixth avenue to North Twenty-third street and North Twenty-third street, from the West road to Steele street, awarded to Walter Brothers for \$40,512.

**Brampton, Ont., Can.**—The contract for the construction of a wall and sidewalk on Main street has been awarded to E. W. Mitchell at \$3,910.

**Winnipeg, Man., Can.**—Dobson & Jackson have been awarded the contract for laying a block pavement on Sargeant avenue, from Arlington to Ern street, at \$18,131.

## SEWERAGE

**Argenta, Ark.**—City will probably extend sewer system.

**Birmingham, Ala.**—Street Committee has recommended ordinance providing for construction of sanitary sewers for district between Thirty-second street and the Avondale boundary; 12-inch piping will be used; cost, \$15,000.—Murray Nicholson, City Engineer.



**Little Rock, Ark.**—E. A. Kingsley, City Engineer, is preparing estimates for a system of storm water sewers for the city.—Mayor Dulcy.

**Pasadena, Cal.**—City Engineer Van Ornum has recommended the construction of a sewer on Eleventh drive between Delacy street and Fair Oaks avenue.

**Denver, Col.**—The Board of Public Works has established four new storm sewer sub-districts in North Denver; work will begin in the early spring; estimated cost, \$94,989.

**Bridgeport, Conn.**—Matter of expending \$1,750,000 for revision of sewer system has again been revived.

**Waterbury, Conn.**—The Committee on Sewers recommended the purchase of a carload of sewer pipe.

**Windsor Locks, Conn.**—Jos. A. Coogan, Health Officer, is prime mover in matter of extending sanitary sewer system.

**Blakely, Ga.**—City will vote December 31 on issue of \$25,000 sewer bonds.

**Pekin, Ill.**—Contract has not yet been let for sewers on north side.—Engineer, John R. Seibert.

**Gary, Ind.**—Council is considering the laying of an 18-inch tile sewer in Tenth avenue, from Broadway to Madison avenue, and a 12-inch tile sewer in alleys, between Washington and Adams streets, Adams and Jefferson streets, and Jefferson and Madison streets.—T. E. Knotts, President.

**Indianapolis, Ind.**—In line with a plan urged recently by Dr. J. N. Hurty, Secretary of the State Board of Health, Mayor Bookwalter has announced that the city would take up the question of disposing of its sewage by some means other than turning it into the White River.

**Michigan City, Ind.**—Mayor Miller, City Attorney Pepple, City Engineer Miles and the Board of Public Works have appeared before Governor-elect Thomas R. Marshall, the Prison Board of Control and Warden James D. Reid, for the purpose of laying before these officials proposition for the building of a sewer at the State's expense.

**Davenport, Ia.**—Mayor Scott has recommended that the storm drain that was completed in East Davenport to Belle avenue and Jersey Ridge road be extended up Valley street to Bridge avenue; plan is to run the storm drain up the big ravine that runs through the street and then make the street over it; it is estimated that the work would cost in the neighborhood of \$20,000; he also urges that it be decided whether the city shall build an intercepting sewer before the Fourteenth street sewer, for if the intercepting sewer is built first the \$80,000 to be spent on the west end sewer could be applied to the intercepting sewer; this sewer would cost \$250,000.

**Horton, Kan.**—Contract will be let about January 1 for extension of main sewer in sewer district No. 1. W. B. Hazen, engineer, St. Joseph, Mo.

**Wichita, Kan.**—Plans are being prepared for a brick or concrete and vitrified pipe main sewer; cost, \$50,000.—Engineer B. C. Wells.

**Washington, Kan.**—Plans are being prepared for sanitary sewers; cost, \$25,000.—Burns & McDonnell, Scarritt Bldg., Kansas City, Mo.

**Franklin, Ky.**—City will soon award contract for sewer system; \$20,000 bonds have been voted.—C. E. Biggs, City Clerk.

**Louisville, Ky.**—The Sewerage Committee of the Southeastern Improvement Club is campaigning for sewers for this section of the city.—H. C. Bierbaum, Chairman.

**Baltimore, Md.**—In the construction of the sewer across North Broadway to connect with that on Ashland avenue it has been decided by the engineers to tunnel under that thoroughfare instead of the usual "dig-to-the-required-depth" method; tunnel will be cut diagonally across, starting from Millman street and extending to Ashland avenue, a distance of 660 feet; this will be the first sewer to cross Broadway.

**Lawrence, Mass.**—The Board of Aldermen have authorized and instructed the Superintendent of Streets to construct common sewers on Lawrence street and Stearns avenue; expense to be taken from the Fairmont sewer loan.

**Pittsfield, Mass.**—Council is considering an appropriation of \$10,000 for improving sewer system.

**Saginaw, Mich.**—Citizens Committee and city officials are securing data concerning sewage disposal plants; they have inspected the water purification and sewage disposal works of Columbus, O.; before returning they will visit the Cincinnati, Pittsburg, McKeesport and Harrisburg plants; party is made up of W. B. Mershon, F. W. Carlisle, H. A. Bachler and Arnold Boutelle, of the Committee; R. F. Johnson, City Accountant, and R. W. Roberts, City Engineer.

**St. Paul, Minn.**—The Board of Public Works has reported favorably on proposed sewer construction, approximating \$40,000; largest project is for a sewer on Randolph street, extending westward from Snelling

avenue to the Mississippi River; work will cost nearly \$35,000; a sewer on Dayton from Cretn to Marlboro, to cost \$1,084; on Bradley, from Minnehaha to Fauquier, and on Fauquier from Bradley to Burns, at a cost of \$2,386, and one on Manomin, from Stevens to George, to cost \$845.

**Flatbush, L. I., N. Y.**—The Flatbush Local Board has recommended proposition to construct a sewer on Surf avenue from West Twenty-seventh street to West Thirty-seventh street, Coney Island; outlet sewers in the immediate neighborhood are contemplated.

**Mt. Vernon, N. Y.**—City has sold \$40,000 worth of sewage disposal works bonds.

**Niagara Falls, N. Y.**—The Board of Estimate and Apportionment has received bids for the \$70,500 bond issue for the construction of a tunnel trunk sewer in the upper milling district; Farson, Son & Co., of New York, were high bidders, their figures being \$101,628.

**Richmond Hill, L. I., N. Y.**—No condemnation proceedings will be required before the installation of sewers in Richmond Hill; work will be begun on the new plans without delay, so that by next spring the system will have been completed; draughtsmen are already at work on the new sewer plan for Richmond Hill; district known as No. 40 will be extended westward to Elm street and the outlet will pass through Lefferts avenue and connecting roads to the Jamaica Disposal Works; system will be built at a depth of 14 feet as far as grades permit; existing disposal plant at Jamaica, it is said, will be used and enlarged if necessary.

**Syracuse, N. Y.**—Ordinance calling for \$200,000 4 per cent. bonds for intercepting sewer construction has been returned to Council on account of a technical error; new ordinance will be passed; petitions have also been received for the construction of a series of pipe sewers in streets in the Ninth Ward; these included an 18-inch sewer in Essex street, from Avery avenue to Hayden avenue; a 15-inch sewer in Hayden avenue, from Essex street to Morton street; a 12-inch sewer in Hayden avenue, from Morton street to Driscoll avenue, and a 12-inch sewer in Morton street, from Hayden avenue to Myrtle street; also ordered 12-inch pipe sewer in South Salina street.

**Warren, N. Y.**—Surveys for a trunk sewer to extend from the east side to west end city limits are being made by Wylie Maitland, Assistant Borough Engineer.

**Columbus, O.**—Gov. Harris appointed W. H. Mills, of Marietta; Dohrman J. Sinclair, of Steubenville, and Dr. Samuel Carey, of Cincinnati, as Ohio members of the commission agreed upon by Legislatures of bordering States to devise means to prevent the pollution of the Ohio River as a source of water supply for cities.

**East Liverpool, O.**—Mayor Crawford is urging the construction of a trunk line sewer from the East End downtown; cost, about \$60,000.

**Toledo, O.**—The East Side Improvement Association has secured the approval of legislation for the construction of a 48-inch relief sewer in Main street, at a cost of \$10,700.

**Youngstown, O.**—Council will sell \$850 in bonds for procuring right of way for Linden avenue sewer outlet.—M. F. Hyland, Clerk.

**Holdenville, Okla.**—A sewerage system will be installed; cost, about \$20,000; bids for the bonds will be received about March 1.—C. E. Arnold, Mayor.

**Muskogee, Okla.**—Commissioner of Public Works Leo E. Bennett and several members of Council are visiting various cities in order to secure ideas for the improvement of Muskogee's sewerage and water works system.

**Wagoner, Okla.**—Council has appointed committee to secure estimates on cost of installing sewer system.

**Brackenridge, Pa.**—Plans have not yet been selected for sewage disposal.

**Harrisburg, Pa.**—Council has referred to Sub-Finance Committee ordinances for sewers in Granite, Sycamore, Green and Eighteenth streets.

**Chester, Pa.**—Council has referred to Sewer Committee ordinance for the construction of a sewer on Fifteenth street, connecting with the sewer at Highland Terrace and extending southward to Upland avenue; also appropriated \$15,000 for extending sewer in Upland street.

**Erie, Pa.**—Bids will be received by the Engineering Department for 1,200 feet of 12-inch tile sewer; cost, \$2,500.—R. S. Scobell, City Engineer.

**New Castle, Pa.**—Council has sent a communication to the Special Commission in relation to sewerage and paving the city and has requested that the citizens shall again have the privilege of an early date of voting on the question of bonding the city for sewers.

**Scottsdale, Pa.**—Work on the plans of the proposed sewage disposal plant is progress-

ing rapidly in the office of Engineer J. B. Hogg, Connellsville. Mr. Hogg has been directed to go ahead with this work by Town Council for a comprehensive scheme for the disposal of that town's sewage.

**Wernersville, Pa.**—The State Board of Health will soon receive bids for the construction of a sewage disposal plant at the State Hospital for the Insane.—S. G. Dixon, Harrisburg, Pa.

**Williamsport, Pa.**—Council is considering the erection of a sewage disposal plant; matter is in hands of Sanitary and Finance Committees.—President, Gilmore.

**Providence, R. I.**—Council has adopted resolutions reported by the Committee on Sewers, ordering sewers constructed in Temple and Huron streets and Union avenue.

**Charleston, S. C.**—City is still considering extension of sewerage system; proposition is to change slightly the system in its extension, to be constructed at a cost of \$300,000, for connection in every section, and \$250,000 for streets yet to be built up.—Mayor Rhett.

**Clinton, S. C.**—Business League is considering the installation of a sewerage system.—J. F. Jacobs, Chairman Special Committee on Sewerage.

**Plankinton, S. D.**—The Council is reported to have decided to establish a sewer system to cost about \$8,000.

**Dallas, Tex.**—Citizens living in the Tenth Ward are preparing petitions to be presented to the City Commission with a view to securing additional sewers for that section.

**Dallas, Tex.**—City Engineer has been instructed to advertise for bids for 650 feet of 22-inch sanitary sewer pipes for use in repairing sanitary sewers. Commissioner Sullivan has recommended the construction of a 6-inch sanitary sewer on Beckley avenue in Oak Cliff, twelve houses to be served in a 1,200-foot run, and the cost to be about \$625; extension of the Travis street sewer for 35 feet for the accommodation of patrons wishing to connect has been recommended; bids have been called for to construct storm sewer connections on Calhoun, Caruth and the surrounding territory.

**Dallas, Tex.**—City is considering the disposal of sewage.—Dr. T. B. Fisher, City Health Officer; Mayor S. J. Hay.

**Haskell, Tex.**—O'Neil Engineering Company, Dallas, Tex., will prepare plans for and supervise construction of sewerage system; bonds, \$7,000, will be voted December 31.

**Port Townsend, Wash.**—Surveys are being made for a new sewer district.—City Engineer, Jackson.

**Seattle, Wash.**—Council is being urged to take preliminary steps in work of constructing lateral sewers in the East Green Lake district.—Councilman W. H. Weaver.

**Spokane, Wash.**—Plans have been prepared by the City Engineer for the construction of a sewer system in the Fifth Ward, district No. 3; estimated cost, \$10,208.

**Tacoma, Wash.**—Council has passed a resolution providing the construction of a sanitary sewer in district No. 613 and adopted one for the construction of a sanitary sewer on Pacific avenue.

**Charleston, W. Va.**—City will receive bids about January 1 for 7,340 linear feet of sewer, ranging in diameter from 8 to 42 inches.—W. A. Hague, City Engineer.

**Grafton, W. Va.**—Council has ordered 350 feet of sanitary sewer laid on West Boyd street.

**Milwaukee, Wis.**—Council has referred to Health Committee resolution for appointment of Health Commissioner G. A. Boding and City Engineer C. J. Poetsch as a committee to investigate a new system of sewage disposal.

**Racine, Wis.**—Council has given the \$2,000 sewer bond ordinance its second reading and referred it to the Judiciary Committee and City Attorney.

**Racine, Wis.**—Council has passed an ordinance that a public sewer be built in Carter street from Yout street to Gould street.

#### BIDS RECEIVED AND CONTRACTS AWARDED

**Washington, D. C.**—The Warren F. Brenizer Construction Co., city, has the contract for constructing a concrete sewer at \$6,284.

**Auburn, N. Y.**—At a special meeting of Council, Peter Byrnes was awarded the contract for the Fulton street sewer at \$1,485, the work to be completed in sixty working days; the bid was \$200 lower than the next offer and \$600 lower than the highest.

**Brooklyn, N. Y.**—The following are the bids received by Bird S. Coler, President of Borough, for furnishing material and constructing sewer in East Ninety-eighth street from East New York avenue to Hegeman avenue, with outlet sewers in East Ninety-eighth, etc., section 3: Engineer's estimate is \$206,640, to be taken as the 100 per cent. basis: King, Rice & Co., 79 per cent.; Seegretto Manino, 85 per cent.; J. L. Carey & Co., 78.47 per cent.; John J.

Creem, 73 5-8 per cent.; John T. Coogan, 97 per cent.; Rodgers & Haggerty, 82 per cent.; J. E. Boyce, 76 per cent.; James Kelly, 94.5 per cent.

**Fulton, N. Y.**—The Board of Public Works has awarded the contract to Pietro Mas-sari for the construction of storm sewers in West First street, Hannibal street and Worth street, at \$3,560.

**New York, N. Y.**—The following bids were received by John F. Ahearn, President Borough of Manhattan, for furnishing all labor and material required for alterations and improvement to sewer and appurtenances in 118th street, between Third and Lexington avenues: Smith & Fitzgerald, \$5,005; M. Marrome, \$5,678; Thomas A. Reilly, \$6,196; Eugene A. Blessing, \$8,852; Bart Dunn, \$5,343; New York Sewer Construction Company, \$6,298; Galvin & Cantwell, \$6,447; Edward Brennan, \$6,565; Joseph Moore, \$6,345. The following bids were received for extension of sewer and appurtenances in 142d street, from and of present sewer to Harlem river: James Moore, \$5,483; Joseph Burns, \$5,483; Edward L. Brennan, \$6,348; Bart Dunn, \$6,682; Eugene A. Blessing, \$6,238; Thomas A. Reilly, \$7,304; Smith & Fitzgerald, \$6,109; James G. Hurdur, \$6,808; New York Sewer Construction Company, \$7,905; Alame Construction Company, \$6,881.

Bids were received on December 1 by Louis F. Haffen, President Borough of the Bronx, for constructing sewers and appurtenances in Mosholu Parkway, between Mosholu Parkway South, near Jerome avenue, and Mosholu Parkway North, at the intersection of Jerome avenue and Mosholu Parkway North, and in Jerome avenue, between Mosholu Parkway North and East 208th street, and in Mosholu Parkway North, between Jerome avenue and Gates place; Knox place, between Mosholu Parkway North and Gun Hill road; Gates place, between Mosholu Parkway North and Gun Hill road; East 208th street, between Jerome avenue and Woodlawn road; East 210th street, between De Kalb avenue and Woodlawn road; De Kalb avenue, between East 208th street and Gun Hill road; Kosuth place, between Mosholu Parkway North and De Kalb avenue; Steuben avenue, between Mosholu Parkway North and Gun Hill road; Van Cortlandt avenue, between Mosholu Parkway North and Rochambeau avenue; Rochambeau avenue, between Van Cortlandt avenue and Gun Hill road; McDonald & Barry, 183d street and Tibbott avenue, \$55,823; Hopper & Perine, \$104,132; Wakefield Construction Co., \$86,887; Leahy Contracting Co., \$80,075; P. F. Brennan, 244 Mount Hope place, \$84,288; Joseph M. Stanton, 1341 Webster avenue, \$77,583; Joseph Burns, 147 East 125th street, \$87,092; Briggs & McLaughlin, 19 East 130th street, \$90,869; O'Leary, Lyon & Flannigan, 245 East 202d street, \$78,613; George M. Dunn, \$84,648; John C. Rogers, \$91,481.

Bids were also received for constructing sewers and appurtenances in Mosholu avenue, between Broadway and Von Humboldt avenue, at its intersection with West 254th street: O'Leary & Flannigan, \$26,099; Voorhees & Sullivan, \$29,115; P. F. Brennan, 244 Mount Hope place, \$30,901; Hanover Contracting Company, 215 West 125th street, \$32,717; Joseph M. Stanton, 1341 Webster avenue, \$32,461; Joseph Burns, \$31,099; McDonald & Barry, \$30,571; Briggs & McLaughlin, \$28,366; O'Connor & McIntyre, \$30,604; George M. Dunn, 737 East 171st street, \$26,873.

**Rye, N. Y.**—The Board of Trustees has awarded the contract to David Peoples, Betz Building, Philadelphia, Pa., for the construction of the sewer system here, at \$290,075.—G. Everett Hill, 156 Fifth avenue, New York, Engineer.

**Piqua, O.**—The Backus Construction Co., of Dayton, has secured contract for construction of a concrete sewer for about \$10,000.

**Dayton, O.**—George Hecker, Jr., city, has secured contract for constructing storm water sewer in Wyoming street, from St. Paul avenue to Phillips street, at \$4,154. There were six bids, the highest being from Paul & Kershner, at \$4,999.50.

**Chester, Pa.**—The contract has been awarded to John J. Williams & Co., of this city, at \$14,775; the only other bid was B. F. Sweatman & Sons, who wanted \$26.68 per linear foot, or an aggregate of \$17,808.

**Harrisburg, Pa.**—Highway Commissioner W. W. Caldwell opened bids for a new sewer in North street from Fifteenth to a point ninety feet north of Sixteenth street. Four bids were received and Lynch & Hesseberger were the lowest bidders, their figures being \$190.58. The other bidders and their figures were: P. J. Bradley, \$204; Henry Opperman, \$207; John N. McCulloch, \$208.60.

**Woonsocket, R. I.**—The Sewer Commissioners have awarded contract to the Cumberland Construction Co., of Providence, for constructing sewers in Vernon and Bennett streets.

**Knoxville, Tenn.**—J. Pike Powers, City

Attorney of Knoxville, and Eugene M. Webb, City Attorney of Park City, have drafted the contract between Knoxville and Park City for connecting the Park City Sewer with the main sewer of the city of Knoxville, for which Park City agrees to pay the city of Knoxville \$250 per year.

**Dallas, Tex.**—Two bids on the construction of a 6-inch sanitary sewer in an alley, between Kentucky street and Exposition avenue, were opened and referred to Commissioner Sullivan; they were: C. W. Olcott, \$358; George S. Vivian, \$435.

Mr. Sullivan recommended the awarding to the Dallas Home Improvement Company of two contracts for laying of 6-inch sanitary sewers as follows: Between Noble and Oak Grove, Bowser and Quick, for \$284. Other bidders: George W. Ennison \$330; C. W. Olcott, \$375; on Throckmorton street for \$242. Other bidders: C. W. Olcott, \$244; George W. Ennison, \$270. The recommendation was approved.

**Salt Lake City, Utah.**—Following are the details of the low bid of George Ross & J. F. Johnston, city, who were awarded contract for sewer extension No. 208, at \$890.85: Excavating and back-filling, 556 cubic yards at 69 cents; furnishing and laying 637 feet 8-inch vitrified pipe, including 4 Ys, at 52 cents; one manhole, \$65.55; one flush tank, \$110.50.—L. C. Kelsey, City Engineer.

**Seattle, Wash.**—The Board of Public Works has awarded to the International Contract Company a contract for laying sewers on West Sixtieth street, et al., for \$12,333.90.

## WATER SUPPLY

**Birmingham, Ala.**—The Commercial Club is urging the better water supply.

**Eufaula, Ala.**—Council has appointed Committee, who will investigate cost of boring artesian well, building new dam and installing turbines.—H. B. Dowling, Superintendent of Water Works and Sewers.

**Huntsville, Ala.**—Council has confirmed ordinance extending city water main into Patton addition.

**Montgomery, Ala.**—City has not yet purchased the four additional boilers needed at water works.

**North Birmingham, Ala.**—Council passed ordinance providing for survey for water system to supply 50,000,000 gallons of water every 24 hours; water will be obtained from Sipsey River.

**Eldorado, Ark.**—John P. Holmes has secured franchise for water works system.

**Phoenix, Ariz.**—Council is considering installation of water works in Mesa District; Engineer Reed and N. H. Code have both made known their plans to Mayor Barnett. Cost, \$50,000.

**New Britain, Conn.**—City is considering the installation of a meter system.

**Bridgeville, Del.**—Bridgeville citizens will vote next February on the question of erecting their own water works.

**Washington, D. C.**—Wm. T. Belt, Chief of the Fire Department, is again urging the installation of a high-pressure water system for fire protection.

**Fitzgerald, Ga.**—City will extend water works; construction under superintendence; day labor; cost, \$25,000; will install air and compound steam air compressor and duplex Worthington compound pump; reservoir, 16x34 feet; 5½ miles mains.—A. H. Denmark, Secretary Water, Light and Bond Commission.

**Fairfield, Ill.**—Town is considering the construction of a water works system.

**Indianapolis, Ind.**—Mayor Bookwater and Fire Chief C. E. Cook will study the high pressure water system used in various cities of the East; it will probably be installed in the downtown district.

**Jeffersonville, Ind.**—The Board of Managers of the Indiana Reformatory have recommended a water system; cost, \$20,000.

**Council Bluffs, Ia.**—Plans are in preparation for the municipal water works plant for Council Bluffs, Ia., for which \$600,000 bonds were recently voted; water supply will be taken from the Missouri River, using sedimentation basins and filters for purification.—Burns & McDonnell, Scarrett Building, Kansas City, Mo., Engineers.

**Council Bluffs, Ia.**—City is now ready to build a modern water works system; plans are being prepared by Burns & McDonnell, Consulting Engineers, of Kansas City; plans include all the features Kansas City has in its water works system and filters in addition; water used is from Missouri River; city voted \$600,000 in bonds to pay for the plant.

**Baldwin, Kan.**—Council has sold the \$35,000 water works bonds to the Morrison Investment Company, of Kansas City, at a 4½ per cent. rate; work on construction will begin at once; present plan is to put the standpipe at the electric light plant and thus have the city property as much together as possible; work of construction has been placed with the firm of M. A. Earl & Co., of Muskogee, Okla.

**Sabetha, Kan.**—Plans are being prepared for water works; cost, \$75,000; and sanitary sewers, cost, \$30,000.—Burns & McDonnell, Scarritt Bldg., Kansas City, Mo.

**Topeka, Kan.**—The Board of Water Works Commissioners have sent a request to Council for 20,000 feet of cast-iron water pipe to be used in their extensions, and it was referred to the Ways and Means Committee.

**Topeka, Kan.**—Specifications for raising well at city water works has been submitted to City Engineer.

**Wichita, Kan.**—Plans have been prepared for a concrete dam, 200 feet long, across Little Arkansas river; bids will be received in 10 days by R. N. Dorr, City Clerk.—Engineer B. C. Wells.

**Lynn, Mass.**—The Water Board has sent a communication telling of the acceptance by the State Board of Health of the filtration scheme recommended by the local board and approved; act directs that after the approval, the Water Board shall commence work on the plan January 1, 1909; estimated cost, \$313,900.

**West Springfield, Mass.**—The Board of Water Commissioners and citizens are considering the bettering of their water supply.

**Battle Creek, Mich.**—Council has directed water mains installed in East and Kingman avenues; also in James street.—T. H. Thorne, City Clerk.

**Grand Rapids, Mich.**—Bids will be re-advertised for third time for 12,000,000-gallon pump.—S. A. Freshney, Secretary.

**Ludington, Mich.**—A company will build an immense concrete and pile dam across the Pere Marquette River in Custer township, and will use the water power for the production of electricity; a power house will be built and three hydraulic turbines each capable of generating 500 horsepower, installed.—A. P. Carr and E. J. Quirk, Promoters.

**Clarksdale, Miss.**—All bids for construction of reservoir, water mains, hydrants, etc., have been rejected; city will undertake work under supervision of Walter G. Kirkpatrick, Engineer, Jackson, Miss.—M. W. Purnell, City Clerk.

**Kansas City, Mo.**—Frank S. Groves, Chairman of the Fire and Water Board, is urging the need of \$1,500,000 for water works improvements.

**Marcelline, Mo.**—Plans and specifications are being prepared for a system of water works, 1,500,000 gallons capacity; cost, \$50,000.—Engineer Geo. W. Sturtevant, 277 Dearborn street, Chicago.

**Mexico, Mo.**—The Mexico Water Company is making surveys, with a view to enlarging reservoirs.

**Dodge, Neb.**—City is considering need of water works.

**Kimball, Neb.**—Town has voted bonds for a new waterworks system.

**Fulton, N. J.**—Town has ordered mains extended on West Fifth street 1,600 feet.—Superintendent James Flynn.

**Hoboken, N. J.**—O'Connor & Taylor have been awarded the \$134,000 bond issue for pumping station at a bid of 1.01939.

**Holly Beach, N. J.**—Holly Beach, Wildwood and North Wildwood Water Company has been incorporated to construct a large water system on Five-Mile Beach.—G. N. Smith.

**Netcong, N. J.**—The Rockland Water Company has offered to sell its plant to Netcong borough for \$30,465.

**Rockaway, N. J.**—Council is considering the laying of 12,000 feet of additional water main to extend water system through all streets to the borough limits.

**Schenectady, N. Y.**—Plans have been prepared by the State Engineer and Surveyor for the transformation of the northern section of Warren county into a State reservoir; surveyors have been at work taking field surveys for some days; dam, if erected, will wipe off the map the village of Chestertown, a lower Adirondack summer resort, and partially flood the villages of Horicon and South Horicon; this is necessary to create a big storage lake which will be drawn on in dry times to feed the new barge canal now being constructed; surveyors have made maps of other sites in the north, but the one at Chestertown appears the most practical and the decision has been all but reached to build the dam there, beginning work within a year or two.

**Niagara Falls, N. Y.**—The Water Commissioners have ordered a 2-inch main laid on Ross street.

**Rochester, N. Y.**—Captain L. T. Nichols, of the Meyyddo Mission Land, Thurston Road, Gates, is urging the continuance of the water mains outside the city's limit.—Commissioner of Public Works Elwood.

**Akron, O.**—Steps to provide a municipal water plant have been taken by the Council; an ordinance to issue bonds in the sum of \$5,000 for the purpose of providing money to enable those in charge to take preliminary steps has been introduced, and President Palmer has referred the ordinance to



the General Improvement and Fire and Water Committees of the Council.

**Columbus, O.**—Directors of Public Service are considering the probable necessity of another pump at the water purification works.

**East Liverpool, O.**—Plans have been prepared for the proposed filtration plant; cost, about \$40,000; J. C. Kelly, City Engineer, will have supervision of the work.—Willis Davidson, City Auditor; J. W. Hill, Cincinnati, Engineer.

**Dayton, O.**—Bids received and opened on December 5 by the Board of Public Service for an extension to Steele dam and for repairs to the old structure have been rejected; lowest bid was for \$26,000; only \$10,500 had been appropriated for this work.

**Dayton, O.**—An engineer of a national reputation, the best that can be secured, to investigate the best method for a future water supply for Dayton, is the plan endorsed by the Chamber of Commerce; Service Board has agreed on this point with the Special Committee of the commercial body; committee from the Chamber of Commerce consisted of E. C. Harley, Chairman; Fred Cappel, C. E. Underwood, Judge Dennis Dwyer, George W. Shroyer and R. T. Johnson.

**Capitol Hill, Okla.**—Estimates will be prepared for water works; cost, \$25,000.

**Hobart, Okla.**—A pump with capacity of 2,000 gallons per 24 hours will be installed.—O. E. Noble, City Engineer.

**Hooker, Okla.**—The citizens have voted to issue \$20,000 bonds for water works.

**Marlow, Okla.**—City will expend \$10,000 for improving the water works and electric lighting plant; a deep well will be sunk.

**Minco, Okla.**—Plans and specifications are being prepared for municipal water works and lighting plant, to cost approximately \$20,000.—Burns & McDonnell, Scarritt Building, Kansas City, Mo., Engineers.

**Tahlequah, Okla.**—Council has been petitioned to instruct the Mayor to issue a special election for the purpose of voting on the question of the purchase of the Tahlequah Municipal Water Company's plant.

**Tonkawa, Okla.**—Burns & McDonnell, Scarritt Bldg., Kansas City, Mo., has prepared plans for water works; cost, \$35,000.

**Muskogee, Okla.**—The \$55,000 bonds voted at a recent election for water and sewer improvements have been shipped to the Hanover Bank of New York, which will deliver them to the purchasers.

**Hillsboro, Ore.**—The United Railways is seeking a line into Washington County; company has filed on extensive water rights along East Dairy Creek; filing covers the use of the stream for irrigation and power and for energy for electric lighting and all other purposes.

**La Grande, Ore.**—The citizens have voted to issue \$160,000 bonds for a new water system.

**Johnstown, Pa.**—The Johnstown Water Company has increased its mortgage to \$750,000 and will make extensive improvements in the spring.

**McKeesport, Pa.**—T. H. Verner, Superintendent of the new Filtration Plant, has stated that \$35,000 is necessary if the plant is to be operated at the end of the fiscal year, April 1.

**Penbrook, Pa.**—Town has granted a franchise to the Extension Water Company.

**Swissvale, Pa.**—Citizens have urged Council to install a municipal water plant in Swissvale.

**Royersford, Pa.**—A movement is on foot to take over the Home Water Works as municipal property, at cost, according to the terms of the franchise under which the company is doing business; franchise, made in 1890, expires in 1910.

**Wilkes-Barre, Pa.**—Nanticoke Council has ordered water pipes placed through the new mountain road.

**Yankton, S. D.**—Citizens have decided petition the Council to call a special election at once to vote on the issue of \$100,000 water bonds; Missouri River water system is being planned for and plans and specifications have been submitted to the meeting by an expert.

**Jellico, Tenn.**—J. B. McCray & Co., Atlanta, Ga., will prepare preliminary surveys, plans and specifications for water works system.—S. B. Snyder, Mayor.

**Childress, Tex.**—City is discussing advisability of constructing dam on Baylor Creek and piping water to city; distance about nine miles; \$35,000 of water works bonds have been voted.

**Denison, Tex.**—City is considering the construction of a dam about three miles from city for supplying water; bonds, \$30,000, will be issued.

**Elgin, Tex.**—The city is considering the construction of a water works system.

**Jefferson, Tex.**—Bonds, \$10,000, have been voted for the extension of water works.

**Kerman, Tex.**—City has voted bonds for extension of water mains.

**Paris, Tex.**—A filtration plant will be

constructed; cost, \$10,000.—E. H. McCuis-tion, Mayor.

**Salina, Utah.**—Richard R. Lyman, of Salt Lake City, is preparing plans for water works; cost, about \$18,000.

**Starksboro, Vt.**—The Aqueduct Water Company has been incorporated; capital, \$2,500; will supply the village with water.—W. M. Baldwin is an incorporator.

**Norfolk, Va.**—Mayor Riddick has approved ordinance appropriating \$3,700 for additional repairs to dams at Little Creek.

**Norfolk, Va.**—Council has received resolution from the Board of Control making an appropriation of \$387.41 for extension of water main on Landing street, from Henry street to Calvert street, and for installing two 6-inch fire hydrants.

**Seattle, Wash.**—Two bids for the riveting of 2,000 feet of steel water pipe running toward Cedar Lake from the light and power plant, have been rejected and City Engineer R. H. Thomson has been directed to carry on the work with the least possible delay. It will require about 40 days to rivet the pipe and the lowest bid was more than \$5,000.

**Spokane, Wash.**—The Board of Public Works are asking for bids for furnishing and delivering at city yards, 240 standard wedge gate valves, of the following sizes and numbers: 4-inch, 15; 6-inch, 150; 8-inch, 25; 10-inch, 25, and 12-inch, 25; valves to stand a hydrostatic test of 300 pounds per square inch, to open to the right, and to have hubs for either cast-iron or hal-omeln pipe, as ordered, pattern to be approved by the Superintendent of the Water Works.

**Tacoma, Wash.**—Water Superintendent H. A. Whitney estimated the cost of the improvements needed at South Tacoma wells and the distributing system at \$200,000. This includes \$38,600 needed for compressors and \$62,000 for service mains. Cost of work to develop Clover Creek includes \$65,000 for eight miles of 28-inch pipe, \$14,500 for 2½ miles of 22-inch pipe, and \$3,500 for intakes. Included also in the \$200,000 is \$16,400 representing cost of engineering.

**Winlock, Wash.**—H. W. Allen, of Chehalis, is preparing plans for water works; cost, about \$10,000.—C. E. Leonard, Town Clerk.

**Walla Walla, Wash.**—The Water Committee has been given charge with power to act of the petition asking for a water main on North Twelfth street, from Cherry street; Council has adopted recommendation for enlargement of the water main on Valencia street in accordance with a petition of property owners.

**Clarksburg, W. Va.**—Council has fixed January 18 for the election to decide on the issuance by the city of \$120,000 in bonds for water works and sewerage improvements.

**Elm Grove, W. Va.**—The plans of the new water company, headed by J. A. Birkett and A. S. Bell, are maturing rapidly, and it is stated that work will be commenced on the reservoir about the first of January; company, which is capitalized at \$50,000, has secured both town and county charters from Peters' Run to Fulton, and after the completion of the reservoir will lay a 6-inch main to Elm Grove and later on to other points.

**Grafton, W. Va.**—Council has ordered one of the old pumps at the water works rebuilt under supervision of Superintendent Beery.

**Keyser, W. Va.**—City is contemplating the construction of a retaining dam below present reservoir dam for retaining overflow of water and leakage from present dam; cost, \$10,000.

**London, Ont., Can.**—The Water Commissioners are considering submitting to a vote the expending of about \$441,000 to increase the water supply.

#### BIDS RECEIVED AND CONTRACTS AWARDED

**\*Gadsden, Ala.**—The U. S. Cast Iron Pipe & Foundry Co., Chattanooga, Tenn., has secured the contract for furnishing 50,400 feet of cast iron pipe from 4 to 16-inch diameter, approximately 1,250 tons, and 65 tons of special castings, at a total of \$26,272. Bids were opened on Nov. 14.

**Los Angeles, Cal.**—We are officially advised that bids were received as follows on November 30 by the Board of Public Works (H. B. Ferris, Secretary) for the construction of the Antelope division of the Los Angeles viaduct: (a) Henningsen Construction Co., \$982,434; (b) P. A. Howard, 212 Frost Building, \$529,009 (awarded contract); (c) A. C. St. John, H. W. Hellman Building, \$593,995; (d) A. H. Calkins, \$596,741; (e) Engineer's estimate, \$457,350. The contract involves the excavation of eleven miles of aqueduct, which is to be lined with concrete. Bids in detail were received as follows: 1,485 linear feet completed and lined tunnel, (a) \$37, (b) \$30, (c) \$30, (d) \$23, (e) \$26.50; 280 linear feet lining tunnel excavation before contract, (a) \$23, (b) \$12, (c) \$15, (d) \$11, (e) \$11.50; 58,625 linear

feet canal lining with cover and back-fill, (a) \$10.75 (b) \$6.20 (c) \$8, (d) \$7.21, (e) \$5.69; 283,140 cubic yards excavation, (a) \$1, (b) 40 cents, (c) 25 cents, (d) 46½ cents, (e) 26½ cents; 446 cubic yards plain concrete in culverts, (a) \$15, (b) \$8, (c) \$10, (d) \$10, (e) \$12; 100 cubic yards rubble concrete, (a) \$10, (b) \$8, (c) \$10, (d) \$7, (e) \$5. Totals, (a) \$982,434 (b) \$529,009, (c) \$593,995, (d) \$596,741, (e) \$457,350. Added for contractor's equipment, \$30,000. Total cost to contractor, \$487,350. Additional cost to city: 56,871 barrels of cement at \$1.41, \$80,188; 671,484 pounds reinforcing steel at 3½ cents, \$23,500; 280 linear feet of tunnel excavated prior to contract, \$4,200. Total cost to city, \$595,238. (Note.—No additions have been made in engineer's estimate for contingencies or contractor's profit.)

**Las Animas, Col.**—The Board of Trustees have awarded the contract to Marshall Bros., Las Animas, at \$48,673, for improving of the water works system, including a new pumping plant and equipment, steel tank or standpipe, and extension and addition to present mains, approximating 23,000 linear feet of cast-iron pipe. The W. K. Palmer Company, Dwight Building, are engineers.

**Pensacola, Fla.**—The D'Olier Engineering Co., of Philadelphia, Pa., has secured the contract for a water system at the Navy Yard for \$9,726.

**Yorkville, Ill.**—Rich & Carleson, Ft. Dearborn Building, Chicago, have secured the contract for constructing concrete reservoir pumping house, cast-iron pipe and for engine and pump for \$5,968. H. G. Goetz, Oak Park, bid \$6,900; H. G. Ingelbert, Morgan Park, \$7,708.—H. D. Hallett, Aurora, Engineer.

**National Military Home, Ind.**—Bids were received by J. W. Sanderson, Treasurer, Marion Branch, N. H. D. V. S., National Military Home, for installation of a water softening and purifying plant, and the contract has been awarded to the National Water Softener Company, of Muncie, for \$3,987.

**Grand Rapids, Mich.**—The Board of Public Works has awarded the contract to Joseph Rusche, city, for the Coldbrook street mains across the river for \$6,475. Other bidders were: Peninsular Contracting Company, \$9,620; G. W. Bunker, \$7,996.

**Fort Robinson, Neb.**—The contract for constructing extensions to the water and sewer system at Fort Robinson has been awarded to J. J. Hannighan, of Omaha, at \$12,538.

**Haddonfield, N. J.**—Bids were received December 1 by the Borough Council for the construction of municipal water works, but Council was enjoined from acting on bids for the present.

**Kingsland, N. J.**—The Jersey City Water Company, in a communication to the Township Committee, has advised the officials that they are ready to make a contract with the township for the supply of water at \$60 per million gallons, after Clerk John F. Woods had sent the company particulars regarding the quantity of water used and data of the expiration of the contract with the Hackensack Water Company; the Clerk was directed to send for a copy of the company's contract.

**New York, N. Y.**—Bids were received as follows by the Board of Water Supply for constructing the north half of the Walkill pressure tunnel, Contracts Nos. 36-37, and 36 and 37: Contract No. 36—American Pipe Manufacturing Company, Fidelity Building, Philadelphia, Pa., \$2,005,185; Mallard Construction Company, Pennsylvania Building, Philadelphia, Pa., \$2,031,180; McArthur Bros., 11 Pine street, New York, \$2,045,595; Reinhart Ennis, Washington, D. C., \$2,140,529. Contract No. 37—American Pipe Manufacturing Company, \$1,857,847; Mallard Construction Company, \$1,889,672; Gore Co., 206 Broadway, New York, \$1,891,375; Mason Henning Co., Richmond, Ky., \$1,888,065. Contracts 36 and 37—Booth & Flinn, 1942 Forbes street, Pittsburg, Pa., \$3,365,467; Bradley Construction Company, 1 Madison avenue, New York, \$3,829,030; S. Pearson & Son, Long Island City, N. Y., \$3,910,153; American Pipe Manufacturing Company, \$3,743,632; Arthur McMullen and Winston & Company, Park Row Building, New York, \$3,345,159; McArthur Bros. and Mason & Henning Company, 11 Pine street, New York, \$4,254,642.

**Troy, N. Y.**—The Board of Contract and Supply has granted the petition of the McDonough Construction Company to assign its contract for the construction of a spillway on water works property to the Troy Trust Company.

**Sandusky, O.**—The Board of Public Service on November 25 awarded the contract for 2,000 feet of trenching for water mains on West Monroe street to August Zielke, at 11¼ cents per foot. The work will be commenced at once. A. J. Stoll is President of the Board.

**Afton, Okla.**—The following contracts were awarded for water works equipment, machinery and deep well: Deep well, to

W. B. Waugh, Galena, Kan., cast-iron pipe, to American Cast Iron Pipe and Foundry Company, Birmingham, Ala.; tower and tank, to Chicago Bridge and Iron Company, 105th and Throop streets, Chicago, Ill.; engines, to English Iron Works Company, 408 West Fifth street, Kansas City, Mo.; generator, exciter and switchboard, to Westinghouse Electric Company, Kansas City, Mo.; air-lift equipment, to Reeves & Skinner, Chemical Building, St. Louis, Mo.; motor-driven pump, to Reeves & Skinner; steam specialties, to English Iron Works, Kansas City, Mo.; pipe, valves and fittings, to English Iron Works, Kansas City, Mo.; boilers, to Kansas City Engineering Company, Kansas City, Mo.—The W. K. Balmer Company, Dwight Building, Kansas City, Mo., Engineers.

**Cherokee, Okla.**—The city has voted \$25,000 of bonds for the construction of water works, for which the contract has been awarded to Charles A. Tappan, Oklahoma City.

**Scranton, Pa.**—The Continental Jewell Filtration Company, New York, N. Y., has been awarded a contract by the Scranton Gas and Water Company for a filter to cost \$60,000 and have a capacity of 6,000,000 gallons daily.

**Ft. Getty, R. I.**—Bids were opened December 7 at the office of Captain Willis C. Metcalf, Quartermaster, U. S. A., Newport, for (a) water system, (b) meter, etc., (c) sewer system at Ft. Getty: Antony Cefalo, Boston, Mass., (a) \$4,575, (b) \$200, (c) \$1,274; McCay Engineering Company, Baltimore, Md., (a) \$7,106 (b) \$373, (c) \$1,483; F. H. Cowin Company, Boston, Mass., (a) \$7,532, (b) \$340, (c) \$2,000; Jos. P. Cotton, Newport, (a) \$5,723 (b) \$549, (c) \$1,354; M. A. McCormick, Newport, (a) \$7,894, (b) \$376, (c) \$2,210; Philip F. Conroy, Newport, (a) \$9,346, (b) \$175, (c) \$724; P. J. Murphy Co., Newport, (a) \$5,813, (b) \$334, (c) \$1,517; Thomas B. Connolly, Newport, (a) \$6,177, (b) \$367, (c) \$1,292; Darling & Slade, (a) \$6,900, (b) \$407, (c) \$1,895, and J. F. Johnston Company, Fall River, Mass., (a) \$7,272, (b) \$395, (c) \$4,173.

**Dallas, Tex.**—The contract of the Chapman Valve Manufacturing Company, covering nearly \$4,000, was read and approved. It places the company under \$1,000 bond for the exact performance of contract, gives sixty days for the beginning of compliance with the terms of the contract, thirty days for the making of substitution for any defective valve, and lays a penalty of \$100 a day for failure to execute the terms within a specified time.

Bids were opened for the furnishing of pipe to the city and referred to Commissioner Sullivan. The bids were: Crane Company, \$335.15; Briggs-Weaver Machinery Company, \$317.96.

**Burlington, Vt.**—The contract for boring an artesian well at the reservoir site has been awarded to J. P. Hoadley, of Middletown Springs, Vt., at \$3.60 per foot.

**Spokane, Wash.**—The Board of Public Works received a bid of \$11,600 from the Union Iron Works, for furnishing and delivery of 200 4-inch and fifty 6-inch fire hydrants, same to be tested to a pressure of 300 pounds per square inch before delivery; this was the only bid received and the contract was awarded at that figure, making an average cost to the city for hydrants of \$46.50 each.

The Cramer Company has contract for about 1,000 tons of 4 to 14-inch cast-iron water pipe for \$42,000.

The Board of Public Works has awarded to Crane Company of Spokane the contract for furnishing 1000 tons of cast iron water pipe of Class C, of the American Water Works Association specifications, delivery to be made during a period of one year, at the following prices: 4-inch, 6-inch and 8-inch pipe, \$42.50 per ton; 10-inch and 12-inch pipe, \$42.10 per ton, and 14-inch pipe, \$41.75 per ton.

**Cheyenne, Wyo.**—The following bids were received by C. C. Carlisle, City Engineer, for the construction of a masonry dam: (a) R. W. Bradley, Cheyenne; (b) Morrison Construction and Manufacturing Company, Denver, Colo.; (c) Strange & Armstrong, Salt Lake City, Utah; (d) Gaffy & Keefe, Denver, Colo.; (e) R. M. Bardsen, Butte, Mont. Earth excavation, per cubic yard, (b) \$4.50, (c) \$4.80, (d) \$5, (e) \$3.50; 1,145 cubic yards loose rock excavation, (a) \$4.50, (b) \$4.70, (c) \$4.80, (d) \$5, (e) \$3.50; 1,145 cubic yards solid rock excavation, (a) \$3.50, (b) \$4.90, (c) \$4.80, (d) \$5, (e) \$3.50; 3,517 cubic yards earth fill, (a) 35 cents, (b) 30 cts., (c) 33 cts., (d) 50 cts., (e) 35 cts.; 1,333 square yards 1 foot thick rip-rap, (a) \$2.50, (b) \$1.85, (c) \$1, (d) \$2, (e) \$1; 7,500 cubic yard concrete dam, (a) \$4.53, (b) \$5.45, (c) \$4.50, (d) \$8, (e) \$6.65; 7,500 cubic yards rubble dam, (a) \$5.78, (d) \$8. Totals, (a) \$45,199, (b) \$54,772, (c) \$46,903, (d) \$75,203, (e) \$60,021.

Bids were received as follows for the construction of the Crystal Lake reservoir: R. W. Bradley & Co., city, \$45,198; Strange & Armstrong, Salt Lake City, \$46,903; R. N.

Bardsen & Co., Butte, Mont., \$60,021; Gaffy & Keefe, Denver (not totaled); Morrison Construction Company, \$53,400.

Bids were also received as follows for the construction of a masonry dam to contain approximately 7,500 cubic yards of concrete, 3,847 cubic yards earth fill and 348 cubic yards stone rip-rap; also 547 cubic yards of loose rock and 1,643 cubic yards of solid rock removed: Strange & Armstrong, \$33,750; R. W. Bradley & Co., \$33,975.—C. C. Carlisle, City Engineer.

## LIGHTING AND POWER

**Eufaula, Ala.**—Council has appointed Committee, who will investigate cost of erecting light plant not less than 60 arc and 1,000 eight-candle-power incandescent lights; also cost of building new dam and installing turbines.—H. B. Dowling, Superintendent of Water Works and Sewers.

**Nashville, Ark.**—J. C. Stephenson will install electric light plant.

**Georgetown, Cal.**—Norvall Douglass, Jr., has filed notice of appropriation for 200 cubic inches of water of Bear Creek at what is known as Big Falls; water power will be developed to generate electricity, which will be utilized for mining purposes.

**Pasadena, Cal.**—Advertisement has been ordered for bids to furnish 8,000 carbons for the lighting department.

**Jacksonville, Fla.**—The Board of Bond Trustees is considering the lighting of Main street from Bay street to Hogans Creek; five electric light poles will be placed on each side of the street in every block; each pole will accommodate two hanging lamps.—P. A. Holt and Geo. W. Clark.

**White Springs, Fla.**—Suwannee River Railway and Power Company has had plans prepared for proposed water power electric plant on Suwannee River, three miles from White Springs; estimates have been invited for construction of dam, canal and power house; also for generators, turbines, switchboards, transformers, cement reinforcement, timbers, gate, etc.—D. G. Zeigler & Co., engineers in charge.

**Americus, Ga.**—A power house to furnish electricity for lighting city will be erected by this city.

**Ashburn, Ga.**—Citizens will vote on issue of bonds for electric light plant and water works.

**Augusta, Ga.**—The Twin City Power Company has petitioned for lighting system franchise; plans for dam and works have been filed with the War Department.

**Elberton, Ga.**—City will improve electric light plant, including raising of dam and installation of larger dynamo.

**Macon, Ga.**—City is contemplating the erection of electric light plant in Vineville.

**Macon, Ga.**—Committee on Lights has reported favorably on petitions for light at Arlington place and Forsyth street and at Duncan and Coleman avenues.

**Norcross, Ga.**—Specifications are being prepared for municipal electric light plant; bids will be received on machinery; \$5,000 bonds have been voted.—T. E. Johnson, Mayor.

**Orofino, Ida.**—J. F. Englehorn and K. D. Ousterhaute have finished plans for the installation of an electric light and power plant.

**Ottawa, Ill.**—The Illinois Traction Company (Congressman W. B. McKinley, of Champaign; T. B. McCauley, of Montreal, Can., and H. E. Chubbuck, of Ottawa, Ill., owners), has planned to furnish electricity for lighting and heating purposes to towns along its lines.

**Evansville, Ind.**—The Evansville Gas and Light Company has ordered plans for improvement of its plant; the construction of a gas holder and the installation of machinery; estimated cost, \$500,000.

**Junction City, Kan.**—The directors of the Junction City Railway, Light and Ice Company have decided to make improvements to its system; cost, about \$100,000; company will install two 250-h.p. boilers, new street cars, and will make other improvements.—W. E. Sweezy, Superintendent.

**Leavenworth, Kan.**—Commissioner Lambert has reported to the Board of Commissioners that he had investigated the lighting proposition of the city and that 60 of the arc lights now in use on the streets could be replaced by Tungsten lights and make an addition of 50 or more Tungsten lights at a reduction of the city expenses \$2,800 a year; City Attorney has been instructed to draw up a resolution requiring the light company to make the required changes.

**Topeka, Kan.**—City Clerk Burge has been directed to advertise for bids for the construction and erection of a steam plant in connection with the electric light plant; Council has ordered that bonds be given amounting to \$60,000 for the construction of a new electric light plant; when the new plant is planted all the street lights in the city will be replaced by the newest and best in the business, and the new plant will

have double the capacity of the old one; the Electric Light Commission is composed of R. L. Cofran, W. W. Mills and Herbert Hackney.

**Bellevue, Ky.**—The City Council has directed that plans and estimates of cost for a municipal electric plant be prepared.—George Hornung & Son, Consulting Engineers, Cincinnati, O.

**Delhi, La.**—City is considering construction of electric light plant and water works.

**Argentine, Mo.**—Council may grant the Portland Cement Company, of Bonner Springs, a gas franchise; cement company owns four gas wells at Muncie; W. H. Caffery, President of the Company, has announced that the gas field will furnish 10,000,000 cubic feet of gas a day, or five times the amount Argentine needs; if the franchise is granted a pipe line four miles in length along the Turner road will carry the gas to Argentine.

**Kansas City, Mo.**—Council has ordered 18 lights installed.

**Kansas City, Mo.**—The firm of Simpson & Groves has started a movement for electric lights on Walnut street between Thirteenth and Fifteenth streets.

**Omaha, Neb.**—Council has ordered electric light arcs installed at the intersection of the following streets: Twelfth and Hickory, Twenty-fourth and Castellar, Twenty-fourth and Arbor and Thirty-first and Corby.

**Perth Amboy, N. J.**—Council is considering appropriations for fiscal year; \$19,000 is provided for lamps and lights.

**Bergen, N. Y.**—A. S. Crocker, Rochester, N. Y., has prepared plans for the construction of a municipal electric light plant; two horizontal tubular boilers and two direct-connected, steam-engine driven generators will be installed.

**Broadalbin, N. Y.**—The Public Service Commission has granted the Broadalbin Electric Light and Power Company permission to issue \$52,500 in stock and bonds; proceeds to be used to pay present obligations of the company, amounting to about \$13,000; the remainder for the construction of a dam, power house, equipment and transmission lines.—Joseph B. Crane, Manager.

**Buffalo, N. Y.**—The Committee on Finance of the Board of Aldermen and Board of Supervisors have decided to install an electric lighting system in the City and County Hall building; plans include the erection of 22 bronze standards supporting 500-candle power lamps; cost, \$75,000; bids are now being received by the Board of Trustees of the City and County Hall.—J. J. O'Leary, Engineer.

**Columbus, O.**—The question of having the City and County buildings lighted by the Municipal Lighting Company is receiving consideration at the hands of the Board of Public Service and Superintendent Gamper of the electric light plant.

**Lima, O.**—Council has passed resolutions adopting the plans and specifications for the new municipal light plant.—C. E. F. Ahm, Cleveland, Engineer.

**Toledo, O.**—Council has ordered the improvement with lighting of Daniels avenue and Gordon street, Cherry street, Milburn avenue and Valley street, Seventh street and Starr street, Hoag street and Lincoln avenue and Cash street and Clarence avenue.—J. M. Babcock, Clerk.

**McAlester, Okla.**—A franchise has been sought by Dr. L. C. Featherstone and associates for natural gas in the main; instead of free gas for city and schools there is a charge of 12 cents a 1,000, in order to insure economy, and the company is to pay the city \$500 a year cash.

**Minco, Okla.**—Burns & McDonnell, Scarritt Bldg., Kansas City, Mo., have been engaged as engineers for electric light plant and water works; bonds will be voted on.—J. C. Kinzey, Mayor; W. E. Shoven, Clerk.

**Muskogee, Okla.**—The question of lighting the pumping station with electricity has been referred to the Water and Light Commission, with power to act.

**Muskogee, Okla.**—If the Commercial Club accepts the proposition of the Land-Continent, Economy and Utica Gas companies, whose pipes are within five miles of the city's limits, the city will have three cent gas.

**Condon, Ore.**—State Engineer has received maps and definite locations of dam sites and power stations on the Deschutes and John Day Rivers from the Wasco Electric and Water Power Company.

**Oregon City, Ore.**—The Land and Electric Company will erect a \$500,000 power plant; work of grading and clearing the land has begun.

**Portland, Ore.**—The City Executive Board has refused to award contract for lighting streets and public buildings for the next five years and has referred bid of the Portland Railway, Light and Power Company, the only one received, back to Council; some are favoring a municipal lighting plant and the floating of \$2,000,000 bonds for installing such a plant.



**Chester, Pa.**—Light Committee has under consideration the installation of lights on Fifth street, alley west of Crosby street and at corner of Fourth and Concord streets.

**Harrisburg, Pa.**—Finance Committee has received resolutions authorizing Chairman Bacon to draw up a resolution calling for bids for the electric lighting of the city; the three-year contract now in force expires next July and the Sub-Finance Committee must have some idea of the cost of the lights in making up the budget for next year. The city now pays \$47 per light and there are 538 2,000-candle-power lights in the city; there will be at least 25 more provided for and the cost will be much greater than \$47, it is believed.

**Milesburg, Pa.**—Borough will install an electrical plant.

**Pittsburg, Pa.**—The Pittsburg Manufacturers' Power Company has been formed for the purpose of building and operating a power plant.—F. J. Kleber, W. J. Stewart and Albert Martin, Promoters.

**Scranton, Pa.**—Council has received an ordinance providing for the erection of 47 new electric lights and for the changing of eight others.

**South Bethlehem, Pa.**—Council is considering erection of a municipal lighting plant.

**Steilton, Pa.**—On motion of Mr. Gerdes the Borough Secretary has been ordered to advertise for bids for gas and electric lighting of the town for the coming year.—Address Burgess Smith.

**West Chester, Pa.**—Borough Council has ordered additional arc lights installed.

**West York, Pa.**—Town Council has granted to the York Haven Water and Power Company, York Haven, Pa., permission to construct and maintain poles, wires, lines and fixtures for the transmission and distribution of electric power and current for electrical purposes over and upon the streets, alleys and highways of the Borough of West York.—B. M. Larkin, Secretary.

**Wilkes-Barre, Pa.**—Arrangements have been completed by the residents of Georgetown for the formation of a light, heat and power company, to be known as the Prospect Rock Heat, Light and Power Company, which will furnish light for the streets of Wilkes-Barre township and Laurel Run borough; plot of ground has already been purchased on which the power plant of the new company will be erected, the plans and specifications for which are being framed by an architect.

**Central Falls, R. I.**—The city is considering an all night street lighting service.

**Dallas, Tex.**—The Dallas Oil and Gas Company has asked the Board of Municipal Commissioners for franchise to cater to the city; gas will be brought from Henrietta or some other field; local men form the company.

**Dallas, Tex.**—Commissioner Doran has recommended and the Board has approved the placing of the following additional lights upon streets: St. Joseph and Floyd, Oak Grove and Nussbaumer, College and Nussbaumer, Watkins and Flora, Peak and Deere, Ross and Greenville road, Haskell and Live Oak, Peak and Carroll, Washington and East Side, Parry and Second, Haskell and Crutcher, Poe and Haskell, Walton and Main, Annex and Junius, Munger and Greenville road.

**Fort Worth, Tex.**—E. R. Brown, representing the Navarro Oil Company, who has been here purchasing right of way for a pipe line to connect with the Clay Company gas fields, has filed application with the North Fort Worth City Council for a natural gas franchise.

**Hubbard City, Tex.**—The Union Central Light and Ice Company has procured franchises and completed surveys, plans and specifications for construction of the proposed electric light plant; plant will cost \$100,000, supply lighting and power, and will manufacture ice; engines, boilers dynamos and wire will be required.—Judson H. Boughton, Nation Light and Improvement Company, Pierce Bldg., St. Louis, Mo., Engineer; W. A. Bass, President.

**San Augustine, Tex.**—San Augustine Light & Power Company is considering the construction of an electric light plant.—F. K. Nance, President, Jacksonville.

**Sherman, Tex.**—City has invited bids for erection of building in which to install electric light machinery.—Henry Zimmerman, City Secretary.

**Tenaha, Tex.**—Lem Hill has received franchise for the installation of electric light plant.

**Terrell, Tex.**—Plans are being prepared for electric light plant; cost, \$15,000.—E. R. Miller, City Secretary.

**Lynchburg, Va.**—Virginia and Northern capitalists are considering the organization of a company, to build a water power electric plant on Staunton River 25 miles south of Lynchburg; plan includes construction of concrete dam costing \$350,000 and transmission of electricity to Lynchburg and other cities; probable capital, \$1,000,000.

**Norfolk, Va.**—Lighting Committee of Council has asked for an appropriation to cover cost of a municipal lighting plant.

**Milton, Vt.**—The amendments to the village charter in the bill introduced by Representative C. G. Rice are of an important nature, as they provide for allowing the village bonding for \$25,000 for a water system, \$15,000 for electric lights; makes all fines collected in village limits payable to village instead of town, and allows the village to build walks, lay out streets, etc., without regard to wishes of abutting property owners.

**Bremerton, Wash.**—The Peninsular Power and Light Company, R. H. Chapman, of Seattle, President, has applied to the Bremerton City Council for a franchise to install a high tension electric power plant; power is to be obtained from the Dosewallips River; company agrees to give a meter rate of 10 cents a kilowatt hour and commercial 10 cents, with motor service at \$50 per horsepower a year; company also promises to have its plant in operation in one year; Council referred matter to the Franchise Committee.

**Camas, Wash.**—Council has received two applications for franchises for electric light systems; Kelley Loe has applied for a franchise for 50 years; he represents outside capital that proposes to build a steam power plant at Camas; the other applicants are G. S. Smith and A. P. Casey, real estate men of Washougal; they propose to build a system between the two towns, and contemplate getting power from the Washougal River.

**Port Orchard, Wash.**—Promoters of a new power company are visiting Port Orchard, Bremerton, Charleston and other towns in Kitsap county with a project to light these towns with electricity; they plan to utilize the power of the Dosewallips River on the west side of Hood Canal; cost of plant, \$250,000.

**Puyallup, Wash.**—Citizens have protested against high rate the Tacoma Industrial Company is charging for lighting; municipal plant is proposed.

**Seattle, Wash.**—Council is discussing the increasing of the electric light plant and water works system; proposed bond issue will be increased to \$800,000; a dam will be constructed about a mile and a half below the present dam on Cedar Creek; estimated cost, \$100,000; company will also install a fifth water wheel and generator at the power plant.—L. B. Youngs, Superintendent Municipal Electric Light Plant; R. H. Thomson, City Engineer.

**Tacoma, Wash.**—Council has referred to Fire and Water Committee ordinances instructing the Commissioner of Public Works to place Tungsten lights on South Twenty-sixth, Twenty-eighth, Thirtieth, Thirty-second, Thirty-fourth and Thirty-sixth streets at their intersection with P street.

**Barboursville, W. Va.**—The United Utilities Company has been formed for the purpose of building and operating a combined electric, water and steam-heating plant; following equipment is needed: one 25-kw., 225-volt direct-current generating set; one 50-gallon per minute turbine pump (vertical preferred) direct connected to a vertical motor of 220 volts; two 50-h.p. boilers (vertical preferred) to operate at 125 pounds; a three-panel switchboard for two 225-volt generators to operate in parallel on six 50-ampere light and power circuits; in addition there will also be required a lot of pipe, fittings, valves, heaters, traps, etc.—L. L. Dowthatt, Manager.

**Jefferson County, W. Va.**—Fred H. Stith, Lexington, N. C., is considering plans for the organization of a corporation to develop water power and build electric plant for transmitting by electricity a minimum of 1,000 horse-power from property on Potomac River in Jefferson County, W. Va.; surveys are now being made by Engineer; \$300,000 will be expended.

**Crivitz, Wis.**—The Northern Hydro Company, of Green Bay, has perfected plans for developing power at High Falls on the Peshtigo River about 15 miles from Crivitz; work will begin in the spring; company will build a wall one mile long for the purpose of creating a reservoir; wall will extend across the river at High Falls and back into the country until it reaches the high land; cost of work, \$2,000,000; power will be transmitted to Green Bay to run the street cars and to light that district; over 5,000 horsepower will be developed.

**De Pere, Wis.**—The De Pere Electric Light & Power Company will extend its transmission lines at a cost of about \$2,500.—L. L. Tessier, Superintendent.

**Fort Atkinson, Wis.**—The Fort Atkinson Gas Company, composed mainly of local business men, is seeking a franchise from the city for the installation of a \$60,000 plant; if a franchise is given them the promoters promise that work of construction will begin at once.

**Racine, Wis.**—Council has passed an or-

dinance that a gas expert be engaged for the purpose of making a valuation of the gas plant and giving such other information as may be required at the hearing before the Railroad Commission, at a cost not to exceed \$800.

#### BIDS RECEIVED AND CONTRACTS AWARDED

**St. Augustine, Fla.**—Council has awarded the contract for street lighting for the ensuing year to the St. Johns Light and Power Company, they being the lowest bidders, and this means that the streets of St. Augustine will continue to be lighted by electricity exclusively. Under the terms of this new contract, which Mayor Masters has been authorized to execute, the city will be supplied with at least 233 60 candle-power tungsten incandescent lights and 29 powerful arc lights. For this service the city will pay about \$7,000 for the year. During the past year there have been sixty-five incandescent lights and 100 arc lights. Fewer arc lights were needed, but more incandescents along the more shaded and narrow streets. The lights to be used are said to be an improvement over the old incandescent lights. This new service will go into effect on January 1, 1909.

The St. Johns Light and Power Company offered to supply the tungsten light for \$19.85 per light per annum, claimed to be superior to the 60 candle-power incandescent light for \$1.65 per month on the every night basis, or the arc light for \$7 per month, and for lighting the city building and fire station \$20.50 per month. The Welsbach Company offered to furnish the boulevard lights at the price of \$30 per light per annum; these lights are 70 candle-power, with a guarantee of 50 candle-power; this company agreed to light the city building and fire station free.—A. W. Corbett, Chairman Street and Lane Committee.

**Beloit, Kan.**—The contract for furnishing and installing a Corliss condensing engine direct connected to a 160-kw. generator, and a 130-kw., belt-driven generator for the municipal electric light plant has been awarded to Hoover, Owens, Rentschler & Co., Chemical Building, St. Louis, Mo. The Westinghouse Electric and Manufacturing Company, of Pittsburg, Pa., will furnish twenty arc lamps and other electrical equipment.—Burns & McDonnell, Scarritt Building, Kansas City, Mo.; Engineers.

**Blackwell's Island, N. Y.**—The following are the bids received by the Department of Public Charities of New York City for the complete conduiting, electric wiring and all other work in connection with installation of a complete electric lighting and power system for certain of the buildings and grounds under jurisdiction of the Department of Public Charities and included in the Metropolitan Hospital District, Blackwell's Island: Cowder & De Young, 45 E. 42d St., New York City, \$14,300; E. J. Dugan, 1123 Broadway, New York City, \$19,761; L. K. Comstock Co., 116 Liberty St., New York City, \$21,600.

**Gowanda, N. Y.**—The bids received by the State Commission in Lunacy for furnishing and installing engine and dynamo and underground electric feeder cables for power house, superintendent's residence and staff house at the Gowanda State Hospital, were: (1) for engine and dynamo, (2) for underground feeder cables, (3) for entire work, including (1) and (2). The G. & W. Mfg. Co., 26 Cortlandt St., New York, (1) \$4,953, (3) \$8,273, 90 days; Fort Wayne Electric Works, Ft. Wayne, Ind., (1) \$4,479, 90 days; Buffalo Electrical Contracting Co., Buffalo, N. Y., (1) \$4,244, (2) \$2,788, (3) \$6,994, 60 days; Edward Joy, 133 Market St., Syracuse, N. Y., (1) \$5,181, (2) \$2,771, (3) \$7,952, 90 days; John Kelly, Syracuse, N. Y., (1) \$4,852, (2) \$3,147, (3) \$7,940, 60 days; Commercial Construction Co., (1) \$4,142, (2) \$2,260, (3) \$6,143, 90 days; J. C. Stearns Co., Buffalo, N. Y., (1) \$4,402, (2) \$3,100, (3) \$7,502; Frost & Sheldon, Albany, N. Y., (1) \$3,950, (2) \$2,100, (3) \$5,850, 90 days; Rochester Electric Motor Co., Rochester, N. Y., (2) \$2,951, 60 days; F. P. Little Electrical Co., Buffalo, N. Y., (1) \$3,966, (2) \$2,414, (3) \$6,380.—T. E. McGarr, Secretary.

**Niagara Falls, N. Y.**—The State Reservation Commissioners received bids for the proposed new double electric elevator in Prospect Park; W. J. Cowdick, of this city, asked \$127,751 for doing the work in 200 days; Charles Fraser, of New York, \$166,082, and 175 days' time, and M. Kantrowitz, of Albany, asks \$182,422 and 500 days; all bids are much higher than the appropriation for the work, but this has been the case right along with bids on State jobs here, the amount of money available nearly always being too small to meet requirements.

**Sodus, N. Y.**—The Supervisors at Lyons have received a report from the Town Board of Sodus of a contract with the Sodus Gas and Electric Company for the lighting of a district of that town as prev-

iously established by the Board of Supervisors for \$1,500 a year.

**Harrisburg, Pa.**—Camp Hill Council has authorized the President and the Secretary of Council and the Chief Burgess to execute a contract with an electric light company for installing and maintaining four standard arc lamps and ten incandescent lights of 32-candle power, to be placed under the direction of the Chief Burgess at the following street intersections: Cumberland and Market, Main and Market, Heyd and Market, Church and Market, Hamilton and Market, Myers and Market, Bowman and Market, Limekiln lane and Market, Oyster Point avenue and Market, Trindle road and Oyster Point avenue, Yale and Oyster Point avenue, Harvard and Oyster Point avenue, Dickinson and Oyster Point avenue and Columbia and Oyster Point avenue; lights to burn from dusk to dawn of every day during the continuance of the contract, and the contract to be effectual as soon as it is executed and to terminate June 1, 1910.

**Scranton, Pa.**—Peter Stipp, city, has been awarded the contract for the construction of the new power plant of the Scranton Railway Company to be erected on the Diamond Flats in the rear of the present plant; the contract price is not announced, but it is understood to be in the neighborhood of \$30,000; work will be begun at once and pushed to an early completion. The contract provides for the construction of a boiler room 75 by 120 feet for the accommodation of sixteen boilers, an engine 60 by 60 feet, and a retaining wall along the Lackawanna River; the buildings will be of reinforced concrete, and when the plant is opened it will have a capacity of 2,400 horsepower, which is twice the capacity of the present plant; eventually it is proposed to make the plant of 7,200 horsepower, which will make it possible for the Scranton Railway Company to give a much improved service.—Frank Caum, General Manager for Railway Company.

**Findlay, O.**—The Board of Service awarded the city lighting contract to the Toledo Urban and Interurban Company for \$65 per light per year; last year the price was \$69.50, but when the Board began to look out for other means of lighting the streets the price was reduced; the city will effect a yearly saving of \$931.50.

**Guthrie, Okla.**—The Public Building Committee of Council had contracted for the electric light fixtures and supplies for the Convention Hall at \$1,202.07; three companies submitted bids; it is suggested that the city place additional arc lights on the streets leading to Capitol Square and on the Square while the Legislature is in session.

**Seattle, Wash.**—Z. C. Miles & Piper and the Cascade Electrical Manufacturing Company submitted bids for combination electric and gas fixtures for the new municipal building; the bids are practically the same and the Board of Public Works will let the contract on the designs submitted by the two firms.

**Grafton, W. Va.**—Council has received application from Messrs. D. C. Pratt, of this city, and C. B. Jamison and A. J. Jamison, for a franchise for the use of the streets and alleys of the city for the purpose of laying mains and conducting the business of the sale of natural gas to the citizens of the city.

## FIRE EQUIPMENT

**Ft. Smith, Ark.**—The Board of Affairs for a second time has recommended that a motor aerial truck be purchased for \$8,100; ordinance appropriating \$12,000 for the purchase of a lot and the erection of a South Side fire station has been referred to Fire Committee.

**Marysville, Cal.**—The city is considering repairs to the present steamer or may purchase another.

**San Bernardino, Cal.**—Mayor Hanford has advised the North Western Improvement club that he would do all he could to secure fire house and equipment for that section.

**San Jose, Cal.**—City will purchase 3½ dozen respirators, same number of helmets and a Carter shut-off nozzle.

**Santa Clara, Cal.**—City is discussing the issue of \$10,000 bonds for new fire houses.

**Sierra Madre, Cal.**—The need of fire protection is being urged.

**Greenwich, Conn.**—City will purchase an auto engine.

**Wilmington, Del.**—Reliance Fire Company has asked Council for an automobile chemical engine.

**Jacksonville, Fla.**—As has been contemplated by the Board of Town Trustees, the location of the Main street fire station will be moved from its present site, on Main street, near Orange street, to the southeast corner of Main and Fourth streets.

**West Tampa, Fla.**—City will purchase 1,000 feet of hose.

**Cairo, Ill.**—Alderman Greaney has offered resolution directing purchase of two chemical engines and other equipment; plans for better fire service are being considered.

**Evansville, Ind.**—The Board of Public Safety has ordered plans for new two-story double hose house.

**Gary, Ind.**—Town is considering the purchase of a combination chemical, hose and ladder auto gasoline fire engine.—T. E. Knotts, President, Town Board.

**Des Moines, Ia.**—School Commissioners will purchase fire extinguishers for use of schools.

**Marshalltown, Ia.**—Plans and specifications are being received for a new fire station to be erected in the near future.

**Garden City, Kan.**—Town is considering the purchase of an auto chemical engine.

**Lexington, Ky.**—The Lexington Fire Insurance Company has recommended that the city provide a first size steamer; replace the present truck with a 75-foot quick hoisting aerial hook and ladder truck, and establish an additional station, to be equipped with a combination hose wagon.

**Winnfield, La.**—The town has organized a Fire Department; will secure equipment.

**Baltimore, Md.**—City has purchased property on South Carolina street as site for engine house; \$30,000 has been appropriated.—Edw. M. Parrish, President Board of Fire Commissioners.

**Chestertown, Md.**—A new hose house will be erected for Fire Department.

**Revere, Mass.**—The town is considering the need of a chemical engine for the beach section.

**Somerville, Mass.**—City will probably purchase gasoline engines.

**Pontiac, Mich.**—Bids will be readvertised for furnishing one 65-foot aerial truck, with double tank combination wagon, 35-gallon tanks, including in the advertisement motor-driven as well as horse-driven apparatus.—Joseph Toynton, Chief; J. H. Thorpe, City Clerk.

**Duluth, Minn.**—Council has directed Board of Fire Commissioners to advertise for bids for site for new fire hall in the vicinity of Fifth avenue east and Seventh street.

**Duluth, Minn.**—Board of Fire Commissioners is considering purchase of a self-propelling fire engine.

**Minneapolis, Minn.**—Two new fire stations and an additional annual expenditure of about \$20,000 is advised by James Canterbury, Fire Chief; he recommends that a fire station be erected near Chicago and Franklin avenues and another near Penn and Twenty-sixth avenues, N.; in the former, he said, an engine and truck ought to be quartered; in the latter, an engine.

**Red Wing, Minn.**—An election will be held in the spring to vote on the issue of \$12,000 bonds for fire protection.—C. H. Meyer, City Clerk.

**Dover Point, N. H.**—A chemical or gasoline engine will be purchased.—John W. Ford, Chief.

**Manchester, N. H.**—The Seventh School District has organized a Fire Department to be known as "The Buckland Fire District."—Henry Slater, Chairman.

**Wolboro, N. H.**—An electric fire alarm system is being urged.

**Audubon, N. J.**—Funds are being secured for additional apparatus for the Defender Fire Company.

**Clarksboro, N. J.**—The town is securing means for the erection of a fire house.

**Millville, N. J.**—The Millville fire companies have asked Council for an appropriation to place call bells in the houses of each member.

**Mount Holly, N. J.**—Council will purchase a chemical engine.

**Paterson, N. J.**—A site at Seventeenth avenue, corner of East Twenty-sixth, will probably be purchased for a house for the chemical fire engine.

**Perth Amboy, N. J.**—A fire company has been established on Woodbridge road near Hall avenue; Council will furnish equipment.—Nels Fouskor, prime mover.

**Amityville, L. I., N. Y.**—Town is considering purchase of a hook and ladder truck.

**Arden, N. Y.**—Town will equip department just formed.

**Ossining, N. Y.**—Bids are being secured by the Archville Fire Department to purchase a chemical engine.

**Schenectady, N. Y.**—Fire Chief Yates has asked Commissioner of Public Safety for a new and more powerful automobile; also for a new Westinghouse gasoline engine similar to the one now in use.

**Yonkers, N. Y.**—Plans for rebuilding the Fire Department building, occupied by the Shandale Hose Company, are being prepared by Architect G. S. Cowles.

**Grand Forks, N. D.**—Bids have been readvertised for the purchase of 1,000 feet of 2½-inch cotton rubber-lined single-jacket fire hose, coupled with automatic couplings, Grand Forks thread, with Higbee cut of thread, said hose to weigh not

less than 50 pounds nor more than 55½ pounds per section of 50 feet, coupled, couplings to weigh not less than 5 pounds nor more than 5½ pounds.

**Cincinnati, O.**—City will enlarge engine house at Sixth and Vine streets.

**Hamilton, O.**—Council has given first reading ordinance to issue \$2,200 bonds for providing and equipping temporary engine house in the Fifth Ward.

**Newell, O.**—Town will organize fire department; apparatus, including chemical, may be secured.

**Wyoming, O.**—Bids will be received December 21 for \$2,000,000 bonds to equip a fire engine house.—W. A. Clark.

**Youngstown, O.**—Fire Chief W. H. Loller is inspecting the department apparatus at Vincennes with the view of recommending the purchase of similar equipment for the new South Side department in this city; Vincennes now owns an auto combination hose and engine truck, this particular piece of apparatus being the object of Chief Loller's visit.

**Youngstown, O.**—A plot has been offered to Council for \$1,050 as a site for fire house.

**Montville (Portland P. O.), Ore.**—The need of fire protection is being urged.

**Bridgeport, Pa.**—Town is considering purchase of a chemical apparatus.

**East Vandergrift, Pa.**—The need of fire apparatus is being considered.

**Fayette City, Pa.**—Town will secure suits for the hose company immediately.—C. W. Beam, President.

**Glenside, Pa.**—A volunteer fire company has been formed at Oreland, Montgomery County, a little north of this place.—W. A. Broles, President.

**Harrisburg, Pa.**—Council has recommended purchase of a \$2,000 chemical wagon for the Paxton Fire Company.

**Philadelphia, Pa.**—City will erect an engine house station at corner of Fifty-fifth and Pine streets; cost, \$12,000.

**Pittsburg, Pa.**—Architects Billquist & Lee will soon receive bids for a 2½-story fire and patrol station; cost, \$40,000.

**South Bethlehem, Pa.**—Council is considering an issue of \$10,000 bonds for erection of a fire house and equipment.

**Wilkes-Barre, Pa.**—A number of citizens from Carey's Patch, Nanticoke Borough, have applied to Borough Council for fire protection.

**Wyomissing, Pa.**—Plans have been prepared for the town hall and engine house.

**Pawtucket, R. I.**—City is considering the need of new fire apparatus; Chief Butler favors an auto truck.

**Providence, R. I.**—A resolution has been adopted by Council appropriating \$10,000 additional for the Fire Department.

**Knoxville, Tenn.**—The Special Committee of Council on the addition to the North Knoxville fire station has decided to recommend the building of a two-story addition in the rear of the present station, running back 26 feet and the same width as the present station.

**Houston, Tex.**—Rescue Fire Company has been organized in Houston Heights; apparatus will be secured.—T. M. Kennerly, President.

**Houston, Tex.**—It is the intention to begin on the Berry street fire station as soon as the sub-pumping plant has been installed.

**Merkel, Tex.**—Council is considering the purchase of a new fire apparatus.

**Clarendon, Va.**—Citizens Association has appointed a committee to purchase a chemical engine.—Thos. I. Donnelly, Vice-president.

**Tacoma, Wash.**—H. A. Whitney, Superintendent of Water Works, has a plan for increasing the fire protection of the downtown district by making a connection between the middle service and the low service systems; a 16-inch pipe line can be laid on Nineteenth street connecting the middle service pipe at Yakima avenue with the low service pipe on E street; this would require but three blocks of 16-inch pipe, the cost being a small factor in the work.

**Benwood, W. Va.**—Council has decided to place a hose reel on High street.

**Grafton, W. Va.**—Fire Chief Gerken will purchase 400 feet of 1½-inch fire hose and 600 feet of 2½-inch hose.

## BIDS RECEIVED AND CONTRACTS AWARDED

**Salina, Kan.**—Council has decided to remodel the Cottage Hotel, on Ash street, for a temporary fire headquarters, and has let the contract for the work to Harry Peters for \$748; H. E. Tannyhill bid \$1,122, and F. Alman, \$956.

**New York, N. Y.**—The following bids were received for a new heating system for Fire Headquarters Building and new annex, located in East Sixty-seventh and Sixty-eighth streets: Baldwin Engineering Company, 107 West Seventeenth street, \$14,000; John Hanken & Bro., \$16,366; Wm. J. Ol-



vane, \$18,544; E. Rutzler, \$17,318; J. C. Stewart, \$21,770; Ralsler Heating Co., \$17,877; Daniel J. Rice, \$20,312; Frank Dobson, Inc., \$16,872, and Blake & Williams, \$16,930.

**Utica, N. Y.**—The contracts for painting and papering in the three engine houses, according to specifications prepared by Fire Chief Briggs, were awarded as follows: No. 1 engine house, Beers & Simmons, \$75; No. 2 engine house, George W. Jeal, \$190; No. 3 engine house, John Scanlon, \$100. Twelve bids were presented.

## ELECTRIC RAILWAYS

**Mobile, Ala.**—The Board of Public Works is considering how street car tracks and the pavement shall be laid on Royal street between Esplanade and Monroe streets.

**Oxnard, Cal.**—Bakersfield and Ventura Railroad, T. B. Blackburn, General Superintendent, will build two miles of track in this city.

**Smyrna, Del.**—The Diamond State Rapid Transit Company has asked Council for an extension of time and some other changes in their franchise. Proposed road will pass between Wilmington and Rehoboth.—J. W. Edean, Chief Engineer.

**Columbia, Ill.**—The East St. Louis, Columbia and Waterloo Railway has completed its surveys and secured most of the rights-of-way for its proposed electric railway; road will be constructed from East St. Louis through Dupont, Bixby, East Carondelet, Columbia and Waterloo, Ill.—E. F. Schoening, President; H. Reichenbach, Secretary and Treasurer, Columbia; Baxter Brown, St. Louis, Mo., Chief Engineer.

**De Kalb, Ill.**—The De Kalb Midland Railway has been incorporated to construct an electric railway from De Kalb to Sandwich; capital stock, \$150,000. John W. McQueen, Herbert J. Burdick and William G. Wilcox, Elgin, Ill., and O. Fred Cole and John F. Pearce, Chicago, incorporators.

**Dixon, Ill.**—The Dixon, Rock Falls & Southwestern Electric Railway Company are considering the construction of an electric railway from Dixon to Silvis.—O. E. Maxson, President; A. S. Goodell, Secretary.

**Freeport, Ill.**—The Freeport Interurban Railway Company, recently incorporated, will construct an interurban electric railway from Freeport to South Freeport, Polo and Dixon; capital, \$2,500.—Owen T. Smith, W. A. Hance and Edward Courtney, incorporators.

**Peoria, Ill.**—The Illinois Traction Company (McKinley System) will build two interurban lines as soon as the bridge at St. Louis is completed; one line will run between Peoria and Bureau, through Chilli-cothe and Henry; distance, 47 miles; the other will be an extension of the Streator line to Peoria, passing through Numont, Eureka and Washington.

**Evansville, Ind.**—Engineer Von Hippel, of the Tennis Construction Company, has received the contract from the Evansville, Mt. Carmel and Olney Electric Railway Company for making the preliminary and complete surveys of the right-of-way of that line, and is already engaged on a reconnoitering tour.

**South Bend, Ind.**—The Lake Shore & Michigan Southern Railway Company has petitioned for permission to construct and maintain a side track from its E. & W. line across Short street to the Rubber Regenerating Company's plant for general freight purposes for that company.

**Ottumwa, Ia.**—The citizens are urging the establishing of an interurban line to nearby points; H. W. Garner, Manager of the Oskaloosa Traction and Light Company and the Oskaloosa and Buxton Interurban Company, are considering the matter.

**Lawrence, Kan.**—Promoter Lanning has asked Council for a franchise for a proposed railway through Kansas City, Lawrence, Topeka and Kansas points; Council has already granted a city franchise to the Sutton interests.

**Olathe, Kan.**—The Kansas City, Olathe, Ottawa and Iola Railway will construct an electric railway from Kansas City, Kan., to Iola, distance 115 miles. Company is planning to carry on both a passenger and freight business. Company's power station will be equipped with gas engines.—F. A. Little, Standard Engineering Company, Cleveland.

**Lexington, Ky.**—An electric road will be built to connect Frankfort and Lawrenceburg via Lexington.—John B. McAfee, Vice-President.

**Baltimore, Md.**—The Northeast Baltimore Improvement Association has approved the plan to lay street car tracks on Light street.

**Pittsfield, Mass.**—The Pittsfield Street Railway Company has petitioned for double tracking Wahconah street.

**Battle Creek, Mich.**—Wm. V. Jacobs is endeavoring to invest capital for an electric road between Grand Rapids and Battle Creek through new territory.

**Escanaba, Mich.**—The Escanaba Power Company has decided to construct a second power dam on Escanaba River near Groos next season; additional power will be used in the operation of a pulp board plant and other industries.—P. L. Utley, President, and M. N. Smith, Secretary.

**Saginaw, Mich.**—Council has granted a franchise to the Eastern Michigan Power Company; franchise has a life tenure of 30 years, covering all the usual privileges of pole erection, conduiting, etc; this company will soon seek entrance to Bay City.

**Jackson, Miss.**—A franchise for a belt line railroad has been offered at meeting of the Council, but because of the importance of the matter it was referred to a committee and will be considered at a special meeting; franchise calls for the right to use and cross the streets in the suburbs, and also to cross all the railroad tracks in one-half of the belt; to circle the city the line would be about 11 miles long, while the crescent, or half circle, will be less than half the entire circle; several local capitalists are behind the proposition, and state that they have the money already secured to construct the road and establish yards and terminals for the big railroads that care to patronize them.

**Kansas City, Mo.**—The Kansas City, St. Joseph and Excelsior Springs Electric Railway is reported to have subscribed for \$200,000 worth of stock in planning to build from Kansas City to St. Joseph and Excelsior Springs; capital stock, \$1,600,000.—J. J. Helm, Kansas City, President.

**Seneca Falls, N. Y.**—The Geneva, Waterloo, Seneca Falls & Cayuga Park Electric Railroad has petitioned for a franchise to extend its line of road.

**Akron, O.**—The Turkeyfoot Traction Company has filed a mortgage to cover a bond issue of \$400,000; money is to be used in building an electric railway between Akron and Turkeyfoot Lake, a pleasure resort. T. L. Childs, Promoter.

**Portland, Ore.**—Council has granted franchise to Portland Railway and Light and Power Company to extend lines to Swift Packing plant and St. Johns.

**Chester, Pa.**—Council has passed an ordinance granting permission to the Union Railway Company to construct a turnout on the west side of Edgmont avenue, beginning forty feet north of the entrance to Chester Rural Cemetery.

**Pittsburg, Pa.**—The Scott Township Street Railway has been chartered to build a five-mile electric railway in Scott township, from the intersection of Washington avenue and the Hope Hollow Turnpike road to the line dividing Scott and Baldwin townships; capital stock, \$30,000; directors, W. E. Kusen, Pittsburg, President; A. J. Schmidt, C. August Stuetz, W. P. Heckman and J. D. C. Miller, J. T. Barr, Chief Engineer, Pittsburg.

**Newport, R. I.**—Plans for a new causeway between the city of Newport and the Naval Training Station are being drawn under the direction of the Commanding Officer of the station, and they will be sent to the Navy Department soon; they will provide for the entry to the station of a line of trolley cars and will greatly facilitate travel between the station and Newport.

**Waco, Tex.**—The Citizens' Railway Company will build an extension to East Waco over the Brazos River.—W. S. Rathell, Superintendent.

**Weatherford, Tex.**—The Weatherford interurban subscription list for this city and Parker County has run up to \$75,000; people are determined to have interurban connection with Fort Worth, and there is strong sentiment here in favor of organizing a home company and building the road, if such action becomes necessary.

**Brattleboro, Vt.**—The Brattleboro and Vernon Railroad Company has been incorporated to construct an electric railway from Brattleboro through Vernon to the Massachusetts State line; capital stock, \$10,000; incorporators: Charles R. Crosby, George L. Dunham, H. L. Emerson, J. H. Estey and others.

**Rutland, Vt.**—The Otter Creek Electric Railway Company will build an electric railway system, about 50 miles in length, connecting Rutland, Clarendon, Wallingford, Danby, Dorset, Manchester, Sunderland, Arlington and Shaftsbury; capital stock, \$50,000; H. B. Barden, Wallingford, Vt., is interested.

**Anacortes, Wash.**—The Anacortes & Eastern Electric Railroad Company will construct a line shortly after January 1; the line has been surveyed from Anacortes up the Skagit River valley, running up through Burlington, Sedro-Woolley, Concrete, Hamilton and Rockfort, up to Marblemount, practically paralleling the line of the Great Northern Railway Company.—E. J. Felt, President.

**Prescott, Wash.**—The Commercial Club is urging the construction and continuance of the new electric road proposed for Day-

ton and Wallula to this place and lower Tonchet Valley.

**Seattle, Wash.**—The cost to the Seattle Electric Company of preparing to handle the traffic to the grounds of the Alaska-Pacific-Yukon Exposition next summer and installing the lighting and power machinery of the grounds, will be almost \$1,800,000; additional trackage will extend over some 15 or 20 miles of city streets.

**Seattle, Wash.**—In granting a permit to the Seattle, Renton and Southern Railway Company to construct a double track line on Fourth avenue, between Washington and Pine streets, the Board of Public Works has specified that grooved rails must be used instead of the usual T-rail now in use in Greater Seattle.—R. T. Wightman, Vice-President.

**Green Bay, Wis.**—Formal application for permission to lay car tracks on Twelfth street from Main north to the city limits has been made to Council by the Bay Shore Street Railway Company, a corporation recently formed by a number of prominent business men.

**Milwaukee, Wis.**—Council has referred ordinance giving the T. M. E. R. and L. Company the right to run electric and interurban cars and equipment over tracks in Milwaukee.

**Hamilton, Ont.**—The Hamilton & Dundas Street Railway Company will soon start work upon double tracking of the line.—Wm. C. Hawkins, General Manager.

## BRIDGES

**Birmingham, Ala.**—The St. Louis & San Francisco Railroad are considering considerable viaduct construction in Birmingham; estimated expenditure, \$400,000.—C. R. Gray, St. Louis.

**Malvern, Ark.**—Hot Springs County will erect bridge at Green Ferry; steel structure; cost from \$10,000 to \$15,000; engineer not selected.

**Redlands, Cal.**—Supervisor Nelson is preparing to construct an 80-foot steel bridge across the Santa Ana River near the mouth of Santa Ana canyon and but a short distance below the first power house; County Surveyor Cook has run the lines for the bridge and has prepared plans and specifications; a call will be made for bids.

**San Bernardino, Cal.**—City Engineer Sloan has presented plans and specifications for the concrete culverts and bridges to be placed over Town Creek and Warm Creek; City Attorney will prepare the necessary resolutions ordering the work.

**Gary, Ind.**—Bids will soon be received for the construction of a bridge across Little Calumet River at South Broadway; cost, about \$37,000.—W. T. Bridge, of Hammond, Ind., Engineer; Chas. Johnson, County Auditor, Crown Point.

**Michigan City, Ind.**—Laporte County Commissioners have consented to an iron bridge 300 feet long across English Lake; bridges will be built at junction of the Kankakee and Yellow Rivers; cost, \$6,000.

**Sioux City, Ia.**—The railroad officials and Board of Aldermen have practically adopted plans for the Wall street viaduct.

**Hutchinson, Kan.**—Council has received a petition for a bridge over creek on Avenue E East.

**Carlisle, Ky.**—The Carlisle, Parks Ferry and Flemingsburg Bridge Company lately incorporated will build a steel bridge over the Licking River.—E. F. Buding, of Millersburg; Dr. J. R. McIntire, of Carlisle; J. M. McIntire, Flemingsburg, and others.

**Alexandria, La.**—A 200-foot trestle across Bayou Robert will be constructed by the Electric Street Railway Company.

**Waterville, Me.**—A bridge will probably be constructed over the Kennebec River by the Lewiston, Augusta and Waterville Railway Co. near this city.

**Sylmar, Md.**—A petition is to be presented to the County Commissioners requesting the erection of a new bridge over North East Creek, near Sylmar.

**Holyoke, Mass.**—J. E. Tighe, City Engineer, is considering plans for a new bridge at Ingleside.

**Duluth, Minn.**—Council is considering the construction of an approach to the Interstate Bridge; Duluth and Superior Bridge Company has asked for franchise to build it; residents living on district south of the Seventy-first avenue west bridge have asked Council to repair the bridge instead of tearing it down.

**Duluth, Minn.**—Bids have been advertised for concrete bridge over Mission Creek at Fond du Lac; estimate, \$1,800.—City Engineer McGilvray.

**Stillwater, Minn.**—City is considering expenditure of \$2,500 in repairing bridge over St. Croix River.

**Dayton, O.**—Specifications for the new concrete bridge at Needmore road have now been completed by County Engineer Howard Klepinger.

**Massillon, O.**—J. W. Ferguson, Chief Engineer for the Toledo-Massillon Bridge Com-

pany, will in the near future furnish to the city plans and specifications for a lift bridge over the canal in Main street.

**Norwood, O.**—County Commissioners, Cincinnati, are discussing the need of a viaduct over Duck Creek to connect Norwood with Oakley.

**Youngstown, O.**—The General Improvements Committee is in favor of issuing \$2,000 in bonds for repairing the West avenue bridge.

**Scranton, Pa.**—The first real sign that West and North Scranton are going to get their long-wished-for viaduct over Tripp's crossing was developed when it was announced that the Lackawanna Railroad officials had consented to meet the representatives of the city for a conference at the scene of the proposed improvement.

**Wilkes-Barre, Pa.**—Nanticoke Borough Council is considering erection of a bridge across the Hazelton Railroad; railroad has offered to build if borough will maintain.—Borough Attorney Geck.

**Wilkes-Barre, Pa.**—Citizens have asked the Court that viewers be appointed to report upon the advisability of having a new bridge built across the river. Attorneys Harry L. Freeman, John H. Williams and J. Q. Creveling represent the petitioners.

**York, Pa.**—Proceedings looking to the reconstruction of the College avenue bridge have been begun in court; a petition of over 20 citizens has been presented asking for the appointment of reviewers to make a report to the court on the first Monday of January of their recommendations concerning the repair or rebuilding of the structure; Judge Bittenger has appointed as reviewers William F. Frey, Surveyor; John H. Wogan and Henry W. Heffner.

**York, Pa.**—Council has received two bills providing for the erection of concrete bridges across Poor House run.

**Newport, R. I.**—Plans for a new causeway between the city of Newport and the Naval Training Station are being drawn under the direction of the Commanding Officer of the Station; it is expected that Congress will make an appropriation for the bridge.

**Greenville, S. C.**—This city and the Greenville Traction Company will jointly erect a bridge over Reedy River.

**Knoxville, Tenn.**—After securing a new plan for the Asylum avenue viaduct the Viaduct Committee will present it to the Southern Railway and Louisville and Nashville Railroad and ascertain what amount of the cost of the structure these companies will pay; both companies have tracks under the present structure, and according to Supreme Court holding in the Harriman case, they must maintain a bridge over their tracks.—Chairman Murphy, of the Viaduct Committee.

**Memphis, Tenn.**—Bids have been advertised for a concrete bridge to be erected at Monroe street.—Mayor Malone, City Engineer, Weatherford.

**Boston, Tex.**—Bowie County has voted \$250,000 bonds for bridge and road construction.

**Houston, Tex.**—Plans for a viaduct 1,300 feet in length, to begin at Travis street and to drop over on Montgomery avenue, in the Fifth Ward, to cost an estimated sum of \$177,000, are being considered.—Engineer H. L. Shaw.

**Houston, Tex.**—Having designed a plan for a concrete viaduct to span the bayous at Travis street, and this having been inspected favorably by the Citizens Committee, Engineer H. L. Shaw will now draught a possible plan for a bridge across at Main street.

**Norfolk, Va.**—Council has received report and resolution from the Board of Control for an appropriation of \$12,000 for a new concrete bridge in Duke street over the northern branch of Smith's Creek and a concrete culvert over the southern branch of the creek.

**Martinsburg, W. Va.**—Bids will be received by the Court shortly for superstructure of bridge over Bock Creek near Glenary; it will be of steel with heavy plank flooring; entire cost of bridge, \$6,000.

**Milwaukee, Wis.**—Council has referred ordinance to issue \$125,000 Michigan street bascule bridge bonds; also \$200,000 bond issue for viaduct across Milwaukee River from Bradford to Wright streets.

**Winnipeg, Man., Can.**—The Central Bridge Committee of Council has approved plans submitted by R. F. Anlacke, Engineer of Transcontinental Railroad Commission, for the traffic and railroad bridge to be constructed over the Red River at St. Boniface street, at a cost of \$700,000.

#### BIDS RECEIVED AND CONTRACTS AWARDED

**Parkdale, Ark.**—Contract for constructing a bridge across Bayou Bartholomew has been awarded to Vincinus Bridge Co., of Monroe, La., for \$7,991.—H. Oliver, of Hamburg, County Clerk.

**Denver, Col.**—The contract for the struc-

tural steel for the Twentieth street viaduct has been awarded by the Park Board to the American Bridge Company, of New York, N. Y., for \$400,000; this cost is to be borne by the Union Pacific, the Colorado and Southern, the Moffat road and the Burlington, and the city will bear the expense of making approaches to viaduct.

**Kine, Col.**—Following are the bids filed with the County Clerk for the building of the new bridge over Grand River: C. G. Sheeley, \$26,372, awarded contract; Levy Construction Company, \$26,945, and M. E. Moulten Bridge Company, \$27,815; there will be two spans, one 240 feet and the other 190 feet in length.

**Evanston, Ill.**—Bids were received December 2 by the Board of Trustees of the Sanitary District of Chicago for furnishing and erecting superstructure of a railroad bridge near Chancellor street, Evanston, and the lowest bid received was that of the Wisconsin Bridge & Iron Co., of Chicago, at \$38,375; extra steel, 3% cts. per lb.; extra steel castings, 7 cts.; extra iron castings, 4 cts., and extra lumber, \$47 per M. ft. Other bids received were: Ft. Pitt Bridge Works of Pittsburgh, of Pittsburgh, Pa., \$41,900; Geo. W. Jackson, Inc., Chicago, \$42,496; Strobel Steel Constr. Co., Chicago, \$42,880; National Constr. Co., Chicago, \$43,157; Chicago Bridge & Iron Wks., Chicago, \$43,270; Warden-Alten Co., Chicago, \$44,891; King Bridge Co., Cleveland, O., \$45,780; Roemheld Constr. Co., Chicago, \$45,900; Penn Bridge Co., Beaver Falls, Pa., \$46,300; Toledo-Massillon Bridge Co., Toledo, O., \$46,900; Pennsylvania Steel Co., Chicago, \$47,790.—L. J. Bryan, Clerk.

**Columbus, Mont.**—The Board of County Commissioners of Carbon, Sweet Grass and Yellowstone Counties has let the contract for the construction of a bridge over the Yellowstone River near Columbus to the Security Bridge Co., of Minneapolis, Minn.; estimated cost of bridge, \$19,900.

**Rochester, N. Y.**—The successful bid received by R. C. Stevens, State Superintendent of Public Works, Albany, for constructing bridge at Allen street, was submitted by M. Fitzgerald, of Hoosack Falls at the following bid: 3,500 cu. yd. excav., 60 cts.; 1,400 cu. yd. embkmt., 15 cts.; 1,050 cu. yd. 2d class concrete, \$8.50; 10 cu. yd. lining, \$1; 450 sq. yd. approach pavement, \$3; 1,600 sq. ft. concrete sidewalks, 20 cts.; 100 lin. ft. new curb, \$1; 50 lin. ft. curb reset, 50 cts.; 24 sq. ft. vault lights, 50 cts.; 1,000 sq. ft. stairways and foot bridge floor, 40 cts.; 23,000 lb. reinforcement, 3% cts.; 2,000 lb. cast-iron pipe, 3 cts.; 215,000 lb. structural steel, 4.5 cts.; 20,000 lb. machinery, 8 cts.; 200 sq. yd. wood pavt., \$3; 4 M ft. Y. P. sawed lumber, \$55; 210 lin. ft. lattice railing, \$2; electrical equipment (lump sum), \$2,500; operator's cabin (lump sum), \$300; safety gate (lump sum), \$100; total, \$29,689.

For constructing the bridge at Lyell avenue, Rochester, W. J. Byrnes Co., Syracuse, was awarded contract at the following bid: 2,300 cu. yd. excav., \$1.20; 650 cu. yd. embkmt., 28 cts.; 800 cu. yd. 2d class concrete, \$7.75; 10 cu. yd. lining, \$2; 600 sq. yd. approach pavt., \$2.50; 2,400 sq. ft. concrete sidewalk, 20 cts.; 100 lin. ft. new curb, \$1.50; 100 lin. ft. curb reset, 75 cts.; 10 sq. ft. vault light, \$2.50; 25,000 lb. reinforcement, 4 cts.; 212,000 lb. structural steel, 0.0512 cts.; 22,000 lb. machinery, 13 cts.; 220 sq. yd. wood pavt., \$3; 4 M ft. Y. P. sawed lumber, \$55; 170 lin. ft. lattice rail, \$2.20; electric equipment (lump sum), \$2,495; operator's cabin (lump sum), \$365; safety gates (lump sum), \$500; rebuilding foot bridge (lump sum), \$560; credit for old superstructure, \$310; total, \$30,970.

**Cincinnati, O.**—The Board of Public Service has awarded the contract for the reinforcement and other structural work in connection with repairs to the Liberty street viaduct to Grainger & Co., at about \$25,000.

**Okanogan, Wash.**—The County Commissioners have awarded the contract for a steel bridge here to the Puget Sound Bridge & Dredging Co., at \$10,500.

**Martinsburg, W. Va.**—Bids for the erection of the substructure of the bridge over Back Creek near Glenary were received by the County Commissioners and the contract awarded to the York Bridge Co., of York, Pa.; the substructure will be of dressed stone, and will cost \$6.25 per cubic yard; work on this portion of the bridge will be commenced immediately, and the court expects to shortly advertise for bids for the superstructure, which will be of steel, with heavy plank flooring; the entire cost of the bridge will be about \$6,000.

**Milwaukee, Wis.**—The Board of Public Works has awarded the contract for the construction of a bascule bridge across the Milwaukee River at East Water street, complete with foundations, to A. H. Vogel, Milwaukee, at \$139,785.—Chas. J. Poetsch, City Engineer.

**New Westminster, B. C.**—The International Contract Co., Seattle, Wash., has been awarded the contract for the sub-

structure of the Lulu Island bridge at \$29,642; the Canada Foundry Co. has the contract for the superstructure at \$26,891.

#### MISCELLANEOUS

**Huntsville, Ala.**—City is considering purchase of the Calhoun property as a site for municipal buildings and a public park.

**Tusculum, Ala.**—The proposition to issue \$25,000 worth of 5 per cent. bonds, maturing within ten years, to be known as Court House bonds, has been carried.

**Sacramento, Cal.**—Plans are being prepared for the erection of a Court House.—R. A. Herold, Architect.

**New Castle, Del.**—The Board of Trade has requested the City Council to secure State legislation to provide for a free city wharf.

**Washington, D. C.**—Plans are being prepared by Architects Harding & Upman for a concrete comfort station; cost, \$15,000.

**Jacksonville, Fla.**—City will expend \$26,366 during 1909 in beautifying the parks.

**Jacksonville, Fla.**—Council has appropriated \$10,000 for a new incinerating plant and the Board of Public Works has instructed Commissioner Alrd and City Engineer Prioleau to secure the drafting of suitable resolutions to be presented to Council for passage, in order that the money appropriated may become available for the purpose as stated.

**Albany, Ga.**—Albany has won her bond suit in the Supreme Court of Georgia; \$75,000 worth of municipal improvements will now go forward.

**Augusta, Ga.**—Major R. M. Harrod, New Orleans, La., has recommended the construction of a levee; also the raising of the canal bank above the city pumping station.

**Peoria, Ill.**—A resolution has been adopted by the Board of Supervisors authorizing the County Clerk to advertise the sale of \$240,000 worth of County Bonds.

**Gary, Ind.**—Plans are being prepared for a City Hall, fire and police station; cost, \$45,000.—Architects, J. E. Hammons & Son.

**Martinsville, Ind.**—Council has instructed City Clerk Bryan to advertise for bids, \$14,000 refunding bonds; the bids will be received seven o'clock, December 23.

**Newton, Ia.**—Proudfoot & Bird, of Des Moines, have prepared plans for a new Court House.

**Topeka, Kan.**—City Clerk Burge has sent in a requisition to Council for a new long carriage copying typewriter; he also desires a case for filing away old records, the latter to be fireproof; the matter is looked upon with favor and was referred to the Ways and Means Committee.

**Topeka, Kan.**—The police will have their motor cycle as the committee reported favorably.—Address Councilmen Jordan or Howard.

**Topeka, Kan.**—A new proposition is presenting itself to the dike builders in North Topeka; in order to accommodate the rise of the dikes at the bridge over Soldier Creek on Central avenue it will be necessary to raise the brick pavement and the bridge itself to a height of seven feet; big dikes at this junction will be over seven feet high, and unless the pavement and street as a whole is raised it will be necessary to make a regular golf bunker in the middle of the street.

**Monroe, La.**—A City Hall will be erected at a cost of \$100,000.

**New Orleans, La.**—The Dock Board has authorized its engineers to prepare plans and specifications for construction of 2,000 feet of wharf, cost \$200,300; wharf from Lafayette street to the Southern Pacific sheds; shed from Canal street to the Southern Pacific shed, and roadways behind completed wharves; Finance Committee and Attorney Bernard McCloskey are receiving bids for \$3,500,000 bonds to complete the wharf system.

**Baltimore, Md.**—City will erect Enoch Pratt Free Library branch at Gorsuch avenue and Taylor street, Waverly; \$500,000 is available for erection of branch libraries.—Edward A. Preston, Building Inspector, City Hall.

**Quincy, Mass.**—City and Railroad Engineers are considering the most feasible way of abolishing the Saville and Water street crossing on the N. Y., N. H. and H. Railroad; city figures cost as \$225,586 and \$191,984 for a two-track system, and \$446,001 and \$240,255 for four-track system.—Prof. Breed, City Expert.

**Bay City, Mich.**—Park Commission have purchased the Norrington block as a park site.

**Detroit, Mich.**—The Fire Commissioners will erect a building for Police Department headquarters; cost, \$400,000.

**Minneapolis, Minn.**—Frank T. Corriston, Superintendent of Police, is urging an entirely new signal service for the Police Department; cost, \$25,000.

**St. Paul, Minn.**—The comfort station, which has been strongly advocated by As-



semblyman Winn Powers, is to be provided for with \$5,000; it has been suggested that it be placed underground, just west of the City Hall on Fifth and Wabasha streets.

**Kansas City, Mo.**—Council has ordered trees planted on Holmes, Campbell, Charlotte and Askew streets.

**Kansas City, Mo.**—Council has received ordinance authorizing the Health and Hospital Board to construct a tuberculosis hospital near Leeds, Mo.

**Kansas City, Mo.**—Architects A. Van Brun & Bro. are receiving bids for a one-story comfort station at Observation Park; cost, \$2,500.

**Camden, N. J.**—In the very near future Camden will possess another public park; a proposition from the Trustees of the Pyne Poynt Park Library Association, to dispose of land in the northern section of the city for a public park, appears to meet with the approval of members of City Council and the Park Commissioners.

**Irrington, N. J.**—Town Council has received an ordinance calling for a \$55,000 bond issue.

**Passaic, N. J.**—Directors of the Hudson & Passaic Canal Company will begin construction in the near future, the proposed canal to connect the two rivers; probable cost, \$15,000,000. Governor John F. Fort, of Trenton, is interested.

**Perth Amboy, N. J.**—Superintendent of Police P. J. Burke is urging a police call system for the city.—Messrs. Gannon, Dalton and Schultz, Committee.

**Trenton, N. J.**—The Pennsylvania Railroad has offered \$10,000 towards the cost of the proposed Cadwallader Park Summit; Board of Freeholders has referred it to the Tunnel Committee.

**Trenton, N. J.**—The Board of Freeholders has received a letter from Howard K. Stokes, in which he offered to purchase \$55,800 worth of county road bonds and \$15,200 worth of bridge bonds at par; Mr. Stokes' offer has been accepted.

**West New York, N. J.**—Town is preparing for another issue of bonds to take up improvement certificates to the amount of \$200,000.

**Albany, N. Y.**—The Soldiers' and Sailors' Monument Commission will invite competitive designs for the proposed monument.

**Brooklyn, N. Y.**—President Coler is urging the Board of Estimate to act on the Fourth Avenue Subway; he offered a resolution that the Board remove all obstructions to the appropriation of money for the construction of subways, but it was ruled out of order, because it was not on the calendar.

**Buffalo, N. Y.**—The Grover Cleveland Memorial Committee will soon invite sculptors to submit competitive designs for the proposed bronze statue. H. H. Seymour is one of the committee.

**Newburg, N. Y.**—Council is considering erection of a contagion hospital.

**New York, N. Y.**—The Department of Health has commissioned Architect J. Stewart Barney to prepare plans for a comfort station, shelter and tool house in St. Nicholas Park for the Department of Health; cost \$30,000, \$40,000 and \$6,000 respectively.

**Niagara Falls, N. Y.**—Bids for construction, complete, including plumbing, electric heating and lighting for shaft and tunnel, and inclined foot path, and for elevators, including machinery, at the State Reservation, Niagara Falls, N. Y., have been rejected; lowest bid, \$127,751; estimate, \$104,500; plans will be altered and new bids called for.—E. H. Perry, Superintendent.

**Poughkeepsie, N. Y.**—The purchase of Eastman Park by the city is now assured; the Board of Aldermen has passed a resolution authorizing Mayor Sague to act on behalf of the city and buy Eastman Park.

**Utica, N. Y.**—The Park Board is considering the construction of a parkway from Elm to Genesee street; Frederick L. Olmsted has prepared plans.

**Greensboro, N. C.**—The Water Commission will erect a brick building for offices and storage rooms for the Water and Light Commission.

**Cincinnati, O.**—Architect A. C. Kuball will prepare plans for a new county jail building; cost, \$200,000.

**Dayton, O.**—Finance Committee has appropriated an increase of \$3,000 for garbage and street cleaning.

**Dayton, O.**—The Board of Safety is considering appropriations for fiscal year; \$5,000 is needed for street repairs; \$40,000 for street lighting; \$4,300 for sewers and drains, and \$5,300 for bridges.

**Hamilton, O.**—Council is considering plans whereby all danger from a flood of the Miami River may be avoided in the future; resolution has been introduced calling upon the City Engineer to draw up plans and prepare specifications for the construction of a substantial levee north of Hamilton and at the New River bridge; this levee will cost about \$5,000 to construct.

**Poland, O.**—The First National Bank of Columbus has purchased \$1,500 general im-

provement bonds for \$1,532 and \$1,214 sidewalk bonds for \$1,226.54.

**Toledo, O.**—Council has endorsed resolution to provide comfort station at Wallbridge Park and a swimming pool at Navarre.

**Youngstown, O.**—City officials will soon make arrangements with the Youngstown Ice Company by which the ice pond in the new South Side Park will be used as a swimming pool in the summer time; pond will be cleaned, bottom of sand put in and new bathhouses erected.

**Ada, Okla.**—The city has voted \$81,500 bond issue for extending water works, constructing sanitary and storm sewers, erecting a \$15,000 City Hall; also the improvement of streets and parks.

**El Reno, Okla.**—City is considering the erection of a city hall, fire station and jail building; cost, \$50,000. Architect not selected.

**Minco, Okla.**—Council has entered into a contract with E. E. King, representing a well-known firm of bankers and brokers of Chicago, to dispose of Minco's proposed issue of bonds in the sum of \$10,000 at par, with a bonus of \$100, or 101 for the issue.

**Oklahoma City, Okla.**—Two police substations have been authorized by the City Council.

**Oklahoma City, Okla.**—Wm. Toan, Superintendent of Sanitary Department, will expend \$15,000 to \$25,000 in increasing the efficiency of his department; 7,000 metallic garbage cans will be needed.

**Poteau, Okla.**—The County Commissioners are discussing the erection of a Court House and jail; cost, \$100,000.

**Tulsa, Okla.**—Mayor W. E. Rohde is urging the issue of \$150,000 worth of bonds for civic improvements; recommendations include: \$100,000 for a Convention Hall and a City Hall; \$20,000 for additional apparatus for the Fire Department; \$20,000 for a new pump at the city water plant; \$20,000 to take up the floating indebtedness of the city; \$20,000 for a park system; \$10,000 for a site and building to house the city supplies.

**Butler, Pa.**—Council, instead of erecting temporary building, may construct a city building to cost \$50,000.—City Clerk Coulter.

**Chester, Pa.**—Edward V. Kane & Company, of Philadelphia, are offering for sale \$70,000 worth of Chester city 4 per cent. bonds.

**Chester, Pa.**—Council has asked Finance Committee to appropriate money sufficient to extend and widen the Market street pier.

**Harrisburg, Pa.**—Committee has been appointed to select site for Mayor's office and police station.

**Lemoine, Pa.**—Bids will be received December 23 for \$7,000 borough bonds.—Oscar Wolfensberger, Secretary Town Council.

**Harrisburg, Pa.**—Council has referred to Sub-Finance Committee the ordinance for purchase of a \$2,500 motor patrol wagon.

**Philadelphia, Pa.**—Mayor Reyburn has signed the ordinance appropriating \$1,500,000 to the Department of Wharves, Docks and Ferries; bids on the work have been advertised for.—J. C. Grady, Director.

**Pittsburg, Pa.**—An ordinance providing for the construction of a subway, to be owned by the city, will be presented at the next meeting of Select Council by C. D. Tilbury, of the Nineteenth Ward; ordinance will provide for tunnel from Grant boulevard and Seventh avenue to Craig street as a part of the subway system.

**Scranton, Pa.**—Council is considering the putting of all wires, except trolley cables, underground.

**Providence, R. I.**—Police signal boxes, similar to those used in the Waschemoket district, will be installed in the Riverside section.

**Central Falls, R. I.**—The city will soon enter into a contract for the removal of swill and garbage.

**Charleston, S. C.**—The city will soon purchase about six water-tight dump carts and one or two sprinklers.—J. H. Dingle, City Engineer.

**Memphis, Tenn.**—An offer has already been made for the proposed issue of \$1,000,000-year 4½ per cent. park bonds; Chairman Galloway gives out some interesting figures relative to the proposed bond issue, and what is to be done with the money thus realized; there are 19 miles of parkway and 12½ miles of driveways in Overton and Riverside Parks, to pave which will cost \$290,000; to oil same will cost \$22,000 more; plantation work will cost \$36,000; buildings and toilets in various parks, \$51,000 more, bridges and culverts another \$91,000, and lights an additional \$10,000; to this the probable purchase price and improvement cost of the Southern Railroad is bulked, at \$500,000, making a total of \$1,000,000; this will insure the completion of the entire park system.

**Dallas, Tex.**—C. W. Happner, J. H. Polard and O. Wagner, a Committee of the

People's Improvement and Protective Association, have urged city to take up matter of deepening and straightening the channel of the Trinity River; raising of levees and the construction of a bridge that will care for the high waters of the sort experienced last spring.

**El Paso, Tex.**—Council has received a petition asking that the sewer boxes and pipes of the city which cross Eighth street be removed, as their presence there made it impossible to furnish water for lands signed up below El Paso; also that if the city would remove these obstructions so the Franklin Canal could be widened and deepened, the canal would be placed on such a grade that the storm waters of the city could be turned into it and through the canal carried off down the valley to the river, unless they were used in irrigating; grade for this new level of the canal to be furnished by the Engineer of the city; petition was signed by M. Jungjohann, J. A. Smith, C. Cadena, T. Davis Porcher, Julius T. Porcher and A. M. Loomis.

**Sweetwater, Tex.**—Council has ordered an election for the purpose of issuing \$24,000 worth of bonds, \$4,000 for the building of a fire station and city hall and \$20,000 for street improvements.

**Bakersfield, Vt.**—Citizens have voted to erect a town house.—F. W. Davis, Town Clerk.

**Burlington, Vt.**—Mayor Bigelow and the Police Commissioners are urging a police patrol wagon for the city.

**Norfolk, Va.**—Finance Committee is considering recommendations for expenditure of \$2,800 for purchase of steam roller.

**Norfolk, Va.**—The Directors of the Anti-Tuberculosis League are urging the securing of additional grounds to be used as playgrounds.

**Portsmouth, Va.**—The city is considering the need of a garbage crematory.—Bascom Sykes, City Engineer.

**Georgetown, Wash.**—A committee has been appointed by the Mayor to have plans drawn for a City Hall; cost, about \$7,500.

**Seattle, Wash.**—A temporary shelter station, cost, \$2,000, will be erected at Fortson place at the intersection of Tesler way and Second avenue.

**Seattle, Wash.**—The Madrona Heights Improvement Club opposed the granting of any franchise to private parties for garbage privileges by the Board of Public Works.

**Spokane, Wash.**—City Engineer J. C. Ralston estimated the cost of erecting lavatories at First and Howard streets, Main and Howard streets, Post and Riverside streets and Bernard and Riverside streets at \$21,500 each.

**Wheeling, W. Va.**—Bids will be received January 5, 9 a. m., for \$695,000 city bonds.—L. E. Sands, L. F. Stifel and Band Mitchell.

#### BIDS RECEIVED AND CONTRACTS AWARDED

**Chicago, Ill.**—The contract for building Chicago's new City Hall was awarded by the City Council to the Noel Construction Company, of Baltimore, whose bid was \$3,295,000, or \$141,000 less than the lowest local bidder. The successful bidder pledges itself under a bond to complete the work within eighteen months from April 25, 1909, or forfeit \$400 a day after that time; sub-contracting, extras, and similar contingencies must all be approved by City Officials or Council.

**Indianapolis, Ind.**—The Board of Public Safety has let the contract for a gasoline truck for the use of the alarm and telegraph system of the Fire Department to the Coppock Motor Car Company, of Decatur; the company agrees to furnish a \$2,950 truck for \$1,650 and guarantee it for three years; the truck will replace a horse and wagon that has been used for some years; the growth of the city requires either a second horse and wagon or an automobile that can make faster time.

**Leavenworth, Kan.**—The contract for the construction of the dikes and protective embankments for the Lentpe drainage district has been let to J. F. Venard and G. F. Bowen, of Lawrence, by the directors of the corporation, and work will begin at once.

**Detroit, Mich.**—The Detroit Lighting Commission has awarded to the Great Lakes Dredge & Dock Co., of Cleveland, O., the contract for the construction of a concrete wharf at the plant on Detroit River.

**Clarksdale, Miss.**—The Hopson Bayou Drainage Commission has let the contract for concrete work at the mouth of the drainage ditch to the Southern Concrete Company of Memphis; the concrete work proper will be done at a price of 30 cents per cubic yard, but that reinforced by steel at \$12.15, the entire contract aggregating \$4,300. Superintendent McWilliams, who has in hand the digging of the main canal, states that the dredge would shortly be ready for operation and the work completed by the middle of January.

**Hoboken, N. J.**—The Committee on Streets and Assessments, to whom was referred the several proposals for the removal of ashes, garbage, etc., has reported that they find the one of Peter A. Pluso the lowest, and recommend that the contract be awarded him at \$9,500; and it was adopted by Council, and the Corporation Attorney was directed to prepare the necessary bond and agreement.—John Delaney and Thomas J. Wren, Committee.

**Jersey City, N. J.**—Supreme Court Justice Swayze has granted a writ of certiorari, bringing under review the awarding of the ash contract in Jersey City to Henry Byrne; the writ is returnable December 18 before the Supreme Court at Trenton. The application for the writ was made by Harry B. Brockhurst, representing Thomas Harrington Sons' Company, of Jersey City; Mr. Byrne was represented at the hearing by William D. Edwards, and Jersey City was represented by Corporation Attorney James J. Murphy and Harry Lane. The plaintiff set forth that when the Street and Water Board Commissioners met on November 27 last and awarded the contract for removing the ashes to Mr. Byrne, it gave the contract to the highest bidder against the interest of Jersey City. Byrne's bid was \$47,000, while the bid of Thomas Harrington Sons' Company was \$43,500. In awarding the contract to Byrne the Street and Water Board Commissioners made use of the following language, saying that the contract was awarded to "that responsible bidder offering terms the most advantageous to Jersey City." Testimony will be taken in Jersey City before a Supreme Court Commissioner, and the witnesses will be asked to explain how the highest bidder got the contract.

**Newark, N. Y.**—Contracts for erecting village hall have been awarded as follows: J. A. Schattner, city, masonry; W. Prignter, carpentry; J. Tyke & Son, painting; L. G. Mattison, plumbing and heating; and J. J. Tibbert, electrical work; total cost, \$21,078.—E. Fox, Clerk Village Trustees.

**New York, N. Y.**—Bids were received as follows by Allen N. Spooner, Dock Contractor, for furnishing all the labor and materials required for repairing the municipal ferryboats or other floating ferry property, and furnishing and delivering supplies therefor: James Shewan & Son, foot Houston street, East River, \$53,865; J. W. Sullivan, 827 E. Ninth street, \$124,425; James Tregarthen Son & Co., foot Seventh street, \$129,457; Griscom-Spencer Co., 90 West street, \$126,053; Alex. Miller & Bros., Jersey City, \$124,950.

The following are the bids opened on December 3 at the office of J. W. Stevenson, Commissioner of Bridges, for construction of the foundations of municipal building to be erected at end of Brooklyn Bridge on Tryon Row, Centre St., City Hall Place and Park Row—(a) for foundations, (b) 5,000 cu. yd. extra excav., (c) total cost: P. J. Carlin Constr. Co., 16 E. 23d St., (a) \$786,000, (b) \$34, (c) \$956,000; R. E. Hemingham, 1 Madison Ave., (a) \$854,000, (b) \$40, (c) \$1,054,000; O'Rourke Eng. & Contr. Co., 345 Fifth Ave., (a) \$845,000, (b) \$16, (c) \$925,000; Arthur MacMullen, 21 Park Row, (a) \$865,000, (b) \$10, (c) \$915,000; Tidewater Bldg. Co., 25 W. 26th St., (a) \$838,500, (b) \$22.50, (c) \$951,000; Gaffney & Steers, 1 Madison Ave., (a) \$824,000, (b) \$10, (c) \$874,000; J. H. Gray & Co., Flatiron Bldg., 23d St. and B'way, (a) \$622,000, (b) \$15, (c) \$697,000; J. C. Rodgers, 121 W. 125th St., (a) \$673,750, (b) \$40, (c) \$873,750; North Eastern Constr. Co., 225 Fifth Ave., (a) \$871,731, (b) \$30, (c) \$1,021,731, and Thos. Cockerill, 147 Columbus Ave., (a) \$784,000, (b) \$35, (c) \$959,000. The cost of the structure is estimated at \$8,000,000.—McKim, Meade & White, Architects.

**Grand Forks, N. D.**—The Austin-Western Co. has sold to Council for \$400 a No. 2 sprinkler wagon; the sprinkler has been accepted by the city and will be paid for June 1, 1909.

**Chickasha, Okla.**—Crites & Beaty, of Kansas City, Mo., have secured the contract to erect the City Hall at \$20,400.

**Philadelphia, Pa.**—George R. Stearns, Director Department of Public Works, has awarded contract for cleaning streets and removing ashes next year to Edwin H. Vane, of Philadelphia, for \$1,199,000; also contract for removing garbage next year to the Penn Reduction Co., of Philadelphia, for \$488,988.

**Dallas, Tex.**—The bid of F. L. Coe for the scavenger work of the city for a period of two years was read and referred to Commissioners Sullivan and Doran, the special committee that for some months has had this feature of city work in charge. Mr. Coe has been doing this work for the city for a period of some six months as a test. His salary is \$450 a month, he furnishing all of the needed wagons, teams and apparatus and paying the hire of all workmen and in every way maintaining the department. The city attends to the matter of inspection and to the collection of the dues.

It is stated that after all of the expenses have been met the city in the six months has cleared about \$600. Mr. Coe's bid offers to provide all of the necessary outfit for the work, to charge 10c a cubic foot for the removal of the accumulations from closets not less frequently than once in sixty days, a minimum charge to be 50c for each service, and a 10 per cent. reduction to be allowed on all payments within ten days from the time the work was done; F. L. Coe, in a supplement to his scavenger bid, offered to haul promptly all carcasses of horses, cows, mules, jacks or jennets at \$3 each from any part of the city; sheep, goats, hogs and the like for \$1.50; the city will be relieved of all cost of collection and of management of the work; the power of regulation is to remain as it is now.

Commissioner Gillespie, in reporting upon bids for the printing of 20,000 warrants for use in the department of the Assessor and Collector of Taxes, recommended the awarding of the contract to the Dorsey Printing Company at \$107. Other bids were M. P. Exline Company, \$120; Hargreaves Printing Company, \$121. For the printing of 8,000 delinquent tax notices, 6,000 for the main city and 2,000 for East Dallas, covering all past due delinquencies for all years, Mr. Gillespie recommended the bid of Edwards Company at \$58. Other bids were Dorsey Printing Company, \$62.50; M. P. Exline Company, \$68. The work was let accordingly.

**Salt Lake City, Utah.**—The State Land Board has awarded to J. H. Burtner and George Raymond, of Salt Lake City, and T. C. Winn, of Nephi, the contract for driving a 600-ft. well in Dog Valley, Juab County, at \$6 per foot; total cost, \$3,600.

**Norfolk, Va.**—Contracts for improvements at the City Park have been awarded as follows: J. F. Shan, contract for furnishing brick and other materials including 62 pillars 18 inches high, two feet long and nine inches thick, for the palm house; \$40 was the price stipulated; T. W. Thomas, for covering roof of the boiler house and setting the hip and ridge rollers, for \$48.50.

**Wheeling, W. Va.**—The Police Committee of Council received the bids on new helmets from F. L. Miller, the Hub Clothing Co. and E. E. Hodshon, which did not differ much; the samples shown by Mr. Miller met the approval of the committee, and he was given the contract at \$2.25 apiece for the helmets. The new ebony clubs which were submitted were adopted by the committee at \$1 per club and 50 cents for the silk tassels.

**Spokane, Wash.**—There being but one bid submitted to the Board of Public Works for the furnishing of material and the construction of a city market building, the contract was awarded to the bidder, C. C. Culliton, 1703 Atlantic street, for same, for the sum of \$1,660. The City Engineer's estimate upon plans and specifications prepared by him for this building is \$1,500.

**Nelson, B. C.**—The Canadian Fairbanks Co. has contract for furnishing travelling crane for the municipal power house, at \$3,620 f. o. b. Brunnyton.

**New Westminster, B. C.**—The lowest bids opened for constructing the New Westminster-Lulu Island Bridge were as follows: Substructure, International Contract Co., Seattle, Wash., \$29,642; superstructure, U. S. Steel Products Export Co., \$26,720.

## TRADE NOTES

**Cast Iron Pipe.**—Chicago: Business is mostly in routine orders, but indications are for a more active demand after the first of the year. Quotations: 4-inch, \$27; 6 to 12-inch, \$26; 16-inch and up, \$25. Birmingham: Considerable activity in the market is expected after the first of the year. It is believed that the advance in quotations will be maintained. Quotations: 6-inch, \$24; 8 to 12-inch, \$23; over 12-inch, \$22. New York: Conditions in the trade are better. Manufacturers are confident of good business in 1909. Quotations: 6-inch, \$24 in carload lots.

**Pig Lead.**—Market dull. Quotations: 4.30c., New York; 4.15c., St. Louis.

**Boiler Company Consolidation.**—The Babcock & Wilcox Company, New York, N. Y., manufacturers of boilers, have purchased the Rust Boiler Co., of Pittsburg, with a plant at Midland, Pa. The Rust Boiler Co.'s plant was part of the big Midland Steel Co.'s plant about 25 miles west of Pittsburg, on the Ohio river.

**Water Filtration.**—The Scranton Gas and Water Company has made a contract with the Continental Jewell Filtration Company, New York, N. Y., for a 6,000,000-gallon daily filter, to cost \$60,000, to be completed October 1, 1909. The water from the filter will go to the Chinchilla reservoir. If results justify it, negotiations will be entered into with the city for the filtration of all of the city supply. The filter company gives a guarantee which provides that when the plant is operated in accordance with instructions and in conjunction with the necessary quantity and quality of coagulants it will deliver 6,000,000 United States gallons of clear filtered water practically free of color, turbidity and matters in suspension every twenty-four hours. When there are 3,300 or more bacteria per cubic centimeter in the raw applied water there shall be a reduction in the filtered water equal to an average of 97 per cent., and when there are less than 3,300 bacteria per cubic centimeter in the raw applied water there shall not remain in the filtered water more than an average of 100 bacteria per cubic centimeter.

**Artesian Wells.**—The Artesian Well and Supply Co., 434 Barnigan Building, Providence, R. I., during the period from November 1, 1907, to October 31, 1908, have driven artesian wells for more than fifty corporations and individuals. For the Abington Water Works, Abington, Mass., they have driven five 2½-inch wells having a capacity of 250,000 gallons a day. For the Citizens' Water Supply Company, Douglaston, N. Y., they sank two 6-inch wells, having a capacity of 23,000 and 188,000 gallons daily, respectively. For the town of Eastman, Dodge County, Ga., one 8-inch well was sunk, having a daily capacity of 115,500 gallons.

**Gas Plant Improvement.**—The Williamsport Gas Company, Williamsport, Pa., has closed a contract with the United Gas Improvement Company, of Philadelphia, Pa., for a new 7-foot 6-inch water gas machine which is to be installed ready for operation within the next seventy days. They have also purchased from the same company a new tar extractor and blast and steam meters to be used in connection with the present 7-foot 6-inch machines, installed in 1905. The new gas machine is to replace the small 5-foot machine which has become too small to hold as a reserve unit. When this new apparatus is installed the gas company will have one of the most modern plants in the State.

**Street Lighting Company Abandons Contract.**—The American Street Lighting Company, of Wilmington, Del., which has a contract with the city for gas lighting, no longer desires to continue in business and has so notified the Street and Sewer Department. The letter explains that the contract under the present rates given by the city is not profitable to the company.

**Electrical Company.**—The International Telechronometer Company, of Rochester, organized to deal in electrical supplies, with a capital of \$500,000, has filed a certificate of incorporation with the Secretary of State at Albany. The directors are Merton E. Lewis, James W. Lewis, George S. McMillan and Clarence McKay, of Rochester, and Victor B. Deyber, of Albany.

**Lighting Consolidation.**—The Public Service Corporation, Newark, N. J., has purchased for a consideration of \$109,000 the Citizens' Electric Light, Heat & Power Company and the Perth Amboy Conduit Company, both of Perth Amboy, N. J. The price paid for the Citizens' company was \$84,000 and for the Conduit company \$25,000.



## MUNICIPAL APPLIANCES

### Calcium Chloride for Dust Laying

THE fight against dust on roads has enlisted the services of several patented materials; and among those designed to prevent the dust from flying is calcium chloride. As a matter of fact, the salt itself does little directly to lay the dust; but it is a deliquescent salt and its affinity for moisture, which it absorbs from the atmosphere, keeps the road damp as long as this action continues or there is any moisture in the air or earth for it to absorb. It is claimed that the effect of one application will last for three or four weeks, and that it is not washed off by ordinary showers, although heavy rainstorms will weaken it and make renewal necessary.

This substance may be applied as 40 per cent. calcium chloride, which is a solution, and is shipped in tank cars; or as 75 per cent., which is solid and is shipped in drums. The former is convenient where large storage tanks adjoining a railroad siding are available. The solid salt liquifies rapidly, and should be kept sealed from the atmosphere or in a water-tight receptacle ready for use. One 610-pound drum of the salt dissolved in 600 gallons of water is the proper solution for ordinary use, and should be spread over not to exceed 1,900 square yards. This is best done by spreading one-half the load over this area in each of two applications, if the road has not been previously treated with this substance. A second application should be made within a few days. If used in a severe dry spell, when humidity is low, a thin coat of water applied during the middle of the day is desirable.

For use on a large scale the Calcide Process Company has patented a process by which it is possible to apply with each cart an average of ten loads per day, with an average haul of two miles from the central storage plant.

For applying calcium chloride by the Calcide process an ordinary water cart holding 600 gallons, with any form of spray, is used. A hose leading from the bottom of the cart tank is used for drawing off the solution, and a rack in the rear holds five galvanized iron barrels, nested together, each of a capacity of 115 gallons.

The watering cart is filled from the

storage tank with 575 gallons of 40 per cent. saturated solution of calcium chloride, then is driven to the first hydrant along the road to be treated. At this point 115 gallons of the solution is drawn off into one of the barrels and left beside the first standpipe. At four other points a barrel is filled and left. By means of a special appliance the 115 gallons of calcium chloride in the last barrel filled is siphoned back into the cart and mixed with the water from the hydrant, diluting the calcium chloride solution, which is then sprinkled from the cart on the road in the same manner as water. At the other hydrants the process is repeated, the barrels being picked up and placed in the rack at the back of the cart as they are emptied.

One cart load of the 40 per cent. solution, spreading five loads of the diluted solution, will cover nearly seven-eighths of a mile of road 21 feet wide, and four trips to the central plant are saved.

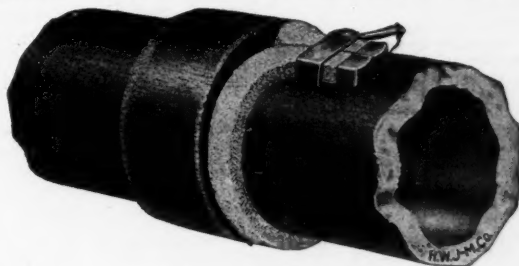
An average of ten loads per day can be applied by this process, as against three and one-quarter loads by the old method previously mentioned. One cart can treat by this process 19,000 square yards per day with an average haul of two miles per load, and, averaging 22 days a month, 418,000 yards per month. An ordinary cart, mixing by hand and spreading under the old method, would cover 6,175 square yards per day, or 135,850 square yards per 22-day month. At an average cost of \$6.00 a day per team, it would cost to cover 19,000 square yards, \$6.00 by the Calcide Process Company's method, and \$18.45 by the old method.

The company claims that ten to twelve coats per season are ample, which will cost from 3.75 cents to 5 cents per square yard per season. The calcium chloride furnished by this company is manufactured by the Solvay process. The company's address is 402 Sears Building, Boston, Mass.

### J. M. Asbestos Joint Runner

THE W. H. Johns-Manville Company, 100 William street, New York, N. Y., manufactures an asbestos runner or guard designed to facilitate the pouring of lead

into the joint of cast-iron pipes quickly and without loss of lead. The runner is square in cross-section so as to fit close to the pipe. There is a ferrule on each end, which with a clamping lever fastens



JOINT RUNNER OF ASBESTOS

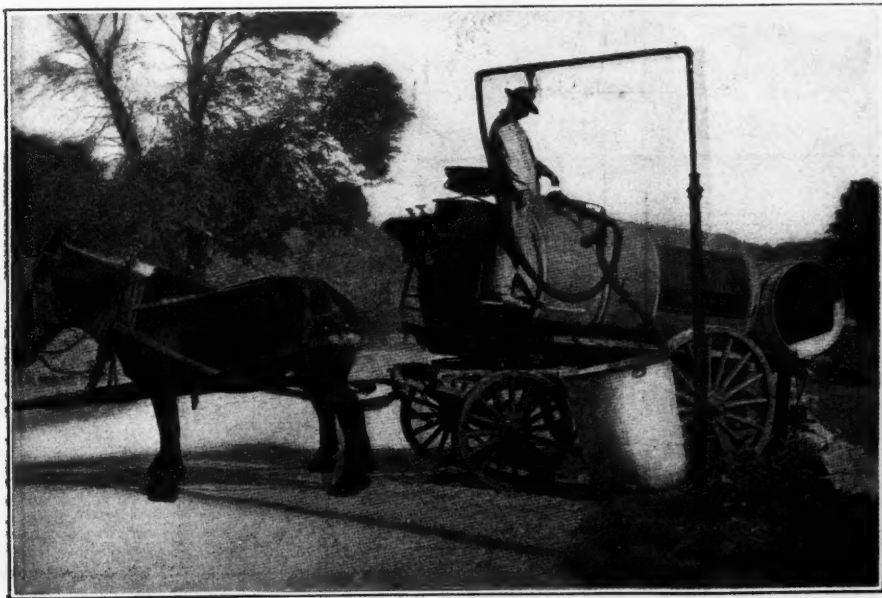
the runner firmly and quickly in place. The manufacturers claim that the device can be adjusted in one-quarter the usual time. As there is no lead left protruding no labor of highly paid men is wasted in chipping off. The saving in lead, too, it is stated, is sufficient to pay for the runner in a short time. Being made of asbestos, it will not char or burn from contact with molten metal.

### Fire Alarm for Village and City

The American Magnetic Fire Alarm Co., Ada, O., manufactures three systems of fire alarms. One is for villages, another for towns and a third for cities. The system recommended for villages, where different fire alarm districts are not needed, consists of a striker for the bell or whistle that sounds the alarm. A magneto-generator is placed in the local telephone exchange and fire boxes may be installed if necessary. The operator at the telephone exchange or the person turning in the alarm at the street box starts the fire bell or whistle.

The selective system recommended for towns consists of the tower striker as before, an indicator for the central fire station by which the number of the fire district is shown in case of a fire, a manual transmitter placed in the central telephone station, or it may be placed in the central fire station and operated by a fireman. An electro-mechanical gong may be placed in engine houses or anywhere else desired. When this system is installed the town is divided into fire districts. A card should be placed on every telephone indicating the number of the fire district in which it is located. At the telephone station when an alarm is turned in the operator takes from the glass case forming a part of the transmitter a small numbered wheel, of which there is one for every district. He places this wheel on the arbor of the transmitting mechanism and pulls a lever. This operation strikes the number four times on the fire bell and gongs, and the needle of the indicator also shows the number.

The third system placed on the market by this company to be used in towns or cities is a magnetic system suitable for use where there are as many as 90 fire districts. This system is similar to that already described. The indicator, however, has a double dial, the first dial indicating tens and the second units. There are five numbers only on each dial, so that 30 circuits may be operated. At the telephone station is a magneto-generator with two dials and hands, the numbers on each index running from 0 to 5, so that it controls 30 districts. The manufacturers claim simplicity, economy and efficiency for their systems.



FILLING CART WITH WATER AND 40 PER CENT. CALCIUM CHLORIDE SOLUTION

## INCORPORATIONS

**Andover Water Company**, Andover, N. J.; to furnish water for town; capital, \$50,000. President, F. P. Thomas; Treasurer, J. A. French; Clerk, H. M. Thomas, all of Andover.

**Bushkill Portland Cement Company**, Jersey City, N. J.; to manufacture Portland cement; capital, \$300,000. Incorporators: George A. Lermann, Jersey City; James W. Houck, Stroudsburg, Pa.; William H. Rees, as above.

**Garbage Can Disinfecting Lining Company**, New York, N. Y.; to manufacture hygienic and sanitary appliances; capital, \$10,000. Incorporators: Benjamin Ruttenberg, Sadie Ruttenberg, 56 East 117th street; Hannah Kronethol and Carrie Foltz, 2051 Fifth avenue, all of New York.

**Holly Beach, Wildwood and North Wildwood Water Company**, Holly Beach, N. J.; to operate water works in the borough of Holly Beach; capital, \$100,000. Incorporators: Charles A. Norton, John Reese, George Smith, Frederick Meyers, Carl Erickson, Henry H. Ottens, Harry H. Hoffman, as above.

**Modern Paving Company**, New York, N. Y.; paving, building material, contracting; capital, \$5,000. Incorporators: William A. Cooper, 71 Wall street; Frank A. Spencer, Jr., 1051 Faile street, both of New York; John A. Palmer, 12 Alice court, Brooklyn.

**Montana Water Company**, Jersey City, N. J.; to supply water and water power for any purpose; capital, \$500,000. Incorporators: Francis W. Collins, 535 West 142d street; Charles S. Henry, 2d, 2 West 95th street; Edgar Van Doran, 102 Waverly place, all of New York.

**United States Drainage and Irrigation Company**, New York, N. Y.; general contractors, drainage, irrigation, diking, filling, ditching and dredging; capital, \$50,000. Incorporators: Edwin M. Skinner and Patrick H. Loftus, Fort Wadsworth; Lennart Nilsson, Arrodar, N. Y.

**United States Light and Heating Company**, Portland, Me.; to supply electricity; capital, \$17,500,000. President, C. E. Eaton; Treasurer, T. L. Croteau; Clerk, J. E. Manter, all of Portland.

## PROPOSALS

## REPAIRING STREET

North Tonawanda, N. Y.

Bids will be received by H. B. Sommer, City Clerk of the City of North Tonawanda, N. Y., on December 18th, 1908, at 8 o'clock P. M., for repairing Erie avenue from Division street to the Sawyers Creek road.

E. C. HEIDENFELD,  
Secretary, Board of Public Works.

## STORM SEWERS

Muskogee, Okla.

The City of Muskogee, Oklahoma, will on December 21, 1908, receive bids for the construction of storm sewers, aggregating \$250,000.00. Plans and specifications may be examined at the office of the City Engineer or may be obtained after Dec. 10 on payment of \$10.00. The work will be part brick, part vitrified pipe and part concrete. Monthly estimates in cash.

L. B. KINSEY,  
City Engineer.

## SEWAGE DISPOSAL PLANT, ETC

Sealed proposals will be received by the building committee of the board of trustees of the State Hospital for the Insane, Warren, Pa., for the furnishing and installing of two natural gas engines, generators and switchboards for electric lighting and power plant. Specifications will be furnished by J. W. Greenland, steward at the State Hospital for the Insane, Warren, Pa.

All bidders are required to send with bid a certified check for the sum of \$250.00, to insure faith on their part. Bids will be received up to 1 p. m. on the 18th day of December, 1908. The committee reserves the right to accept or reject any or all bids.

S. W. WATERS,  
Secretary Board of Trustees.

## REFUSE DISPOSAL

City of Boston—Street Department.

Bids will be received at the office of the Superintendent of Streets of the City of Boston, 47 City Hall, on Tuesday, January 5, 1909, for the erection and operation on the property of the City of Boston at Fort Hill Wharf, of a plant for the disposal by incineration of portions of the combustible waste, to be separated from city refuse, delivered at the plant. The approximate amounts of refuse to be treated, based on the collections for the present year, are as follows:

	Tons.
Paper .....	12,592
Mixed refuse (garbage, ashes and paper) .....	42,982
Mixed refuse (ashes and paper) .....	57,050
Dry-weather street-sweepings .....	2,500

Portions of the above having a commercial value to become the property of the contractor, so long as disposed of in a sanitary manner, the clinker resulting from incineration and clean ashes screened from mixed refuse to be delivered on board city scows.

Alternate proposals will be received on the basis of disposal of refuse as above indicated, the contractor to erect a dumping station at Fort Hill Wharf and incinerating plant in vacant building near the Pumping Station at the Cow Pasture, so called in Dorchester, the screened ashes and clinker to be disposed of by the contractor.

Bidders are expected personally to examine the locations and materials and submit their own plans and detailed specifications. Plans of the locations and general specifications will be furnished on application at the office of the Superintendent of Streets. The contract will be for a term of there (3) years with a right to extend for a further term of five years on the part of the City of Boston.

GUY C. EMERSON,  
Superintendent of Streets.

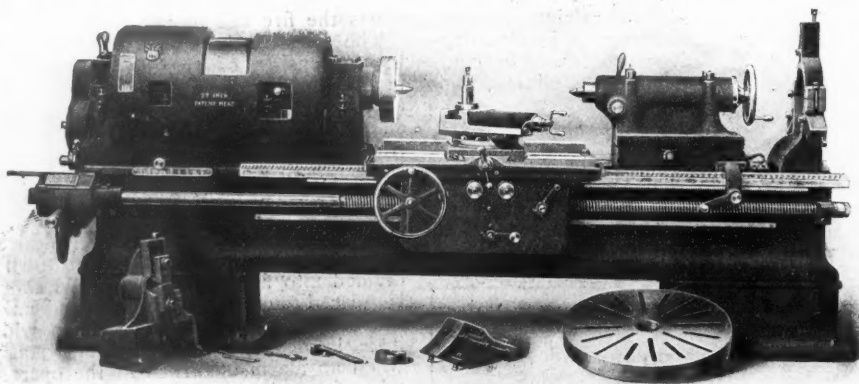
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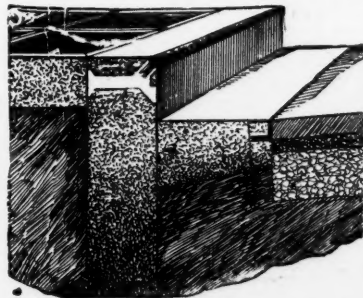
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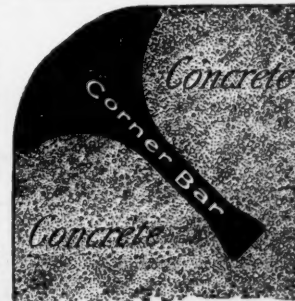


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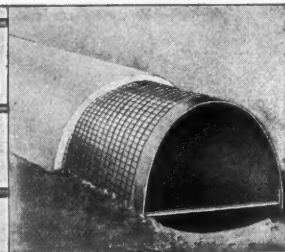
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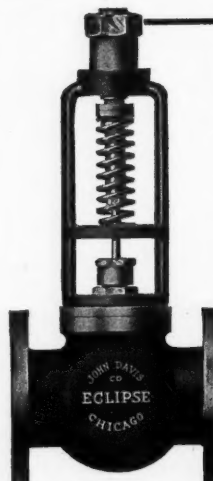
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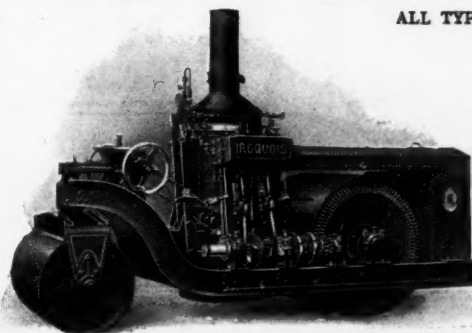
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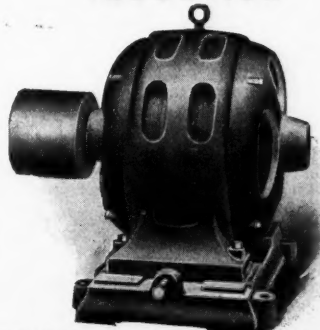
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Fig. 41  
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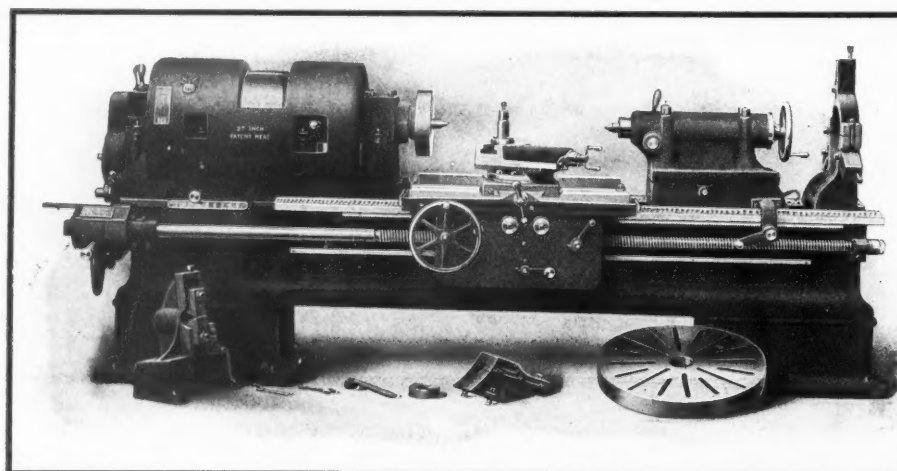
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## The Oil City Dump Wagon



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